UNIVERSITY OF KWAZULU-NATAL

PERCEPTIONS OF HUMAN RESOURCE INFORMATION SYSTEM USAGE FOR KNOWLEDGE MANAGEMENT IN THE CONTEXT OF HUMAN RESOURCE MANAGEMENT

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TO WHOM IT MAY CONCERN

This is to certify that I have proofread the dissertation of KRISANDRA NAICKER for accuracy of language and expression. After implementing changes, wherever applicable, I declare that this dissertation, to the best of my knowledge, is grammatically correct.

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Dedication

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Abstract

21st century human resource (HR) managers face new challenges that require the management of employee resources and the management of information resources overload to support human resource management (HRM). The proposed research will examine the integrated approach that could be adopted by human resource information systems (HRISs) to identify, classify, store and evaluate human resource information assets to meet the strategic needs of HRM in the 21st century organisational era.

The information assets may include databases, documents, policies, procedures, as well as the un-captured tacit expertise and experience stored in individual's heads, in the form of knowledge. We live in an information economy powered by the human capacity to create value out of knowledge – an intangible asset that is referred to as Due to scarcity in natural resources, modern and knowledge organisations increasingly depend on the knowledge contained in the organisation to succeed and remain competitive.

This study examines the perceptions of Human Resource Information System usage for knowledge management in the context of human resource management. Data for the study was obtained from a sample of 70 human resource employees employed at retail organisations within South Africa. The data was quantitatively analysed using descriptive and inferential statistical techniques. The study indicated uncertainty about the use of HRIS functions while the respondents agree with using technology as a tool for sharing information.

The concept of knowledge was explored as a strategic asset for the organisation to capitalise on as a competitive advantage, and the study explained that while HR employee's value and recognise the various forms of the knowledge assets within employees, HR employees were uncertain about knowledge challenges. Although knowledge is generally shared within organisations, the benefits must be further explained in order to gain commitment and support.

List of acronyms and abbreviations

DBMS: Data base management system

EDMS: Electronic Document Management Systems

ICT: Information, communication and technology

IT: Information technology

HR: Human resources

HRIS: Human resource information system

HRM: Human resource management

KM: Knowledge management

PAIA: Promotion of Access to Information Act 2000

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CHAPTER ONE
INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 Introduction

Modern businesses rely on the organisational knowledge to compete and compensate for scarcity in natural resources. Literature refers to the value of a knowledge-based economy as the product of knowledge and information (Schweyer, 2004:42). Wei (2009) adds that due to new challenges of the knowledge economy, human resources (HR), acting as knowledge workers, have taken the place of equipment and capital. Various authors have identified different approaches for categorising the tools that make up the knowledge management (KM) system (Lee and Lee, 2003; Malhotra, 2004 and Kalkan, 2008). However, there has been a lack of convergence between the knowledge management (KM) and the Human Resource Information System (HRIS) to improve the efficiency and effectiveness of human resource management (HRM).

The profitability of a company cannot be generated without the ideas, skills and talent of the knowledge of its employees and organisational processes (Zack, 1999). Probst, Raub, and Romhardt (2002) confirm that this is more evident in a knowledge-intensive organisation. Unfortunately, such organisations are not as prevalent; instead, businesses work within silos. As a result, information and knowledge is not shared.

The HRIS is a potential tool to generate such information and knowledge sharing within an organisation. Mayfield, Mayfield and Lunce (2003) acknowledge that an HRIS is a powerful tool and greater understanding is required in order to achieve its optimum potential. Minimal research has focused on the relationship between HRISs, KM and HR users. Research on the effective use of HRISs to strategically improve HR and KM practices has been limited.

According to Hossain, Patrick, and Rashid (2002), the need for such systems has enlarged over recent years and the authors provide an example of increased emphasis on the ability to satisfy the needs of the customers, simultaneously outcompeting rivals and meeting strategic business objectives. Hossain, Patrick, and Rashid (2002) confirm that to achieve such goals, the functions of the HRIS must allow individual units to share and compare industry metrics and objectives.

This study assesses employee perceptions of the HRIS usage for KM in the context of HRM within three organisations in the retail industry.

1.2 Problem statement

HRISs, as a HRM tool to leverage and complement knowledge management, is underemphasised in organisations. This underemphasis severely prejudices the organisations‟s ability to strategically compete and survive. Retail organisations have also failed to compensate or to include KM initiatives within HRISs as part of performance measurements which may partially explain the lack of interest and awareness of KM interventions.

Referring to Nonaka and Takeuchi‟s 1995 study incorporating the four knowledge conversion processes, it appears to be lacking in existence and may be attributed to the "novelty" of knowledge management across the organisations.

1.3 Motivation for the study

Research conducted by Business Brief *„Does HR Management contribute to business success'*, explains that HR access to strategic information is rather limited. However, technological advances can create the platform for information and knowledge transfer and exchange and greatly contribute to the growth of the knowledge information architecture. Although the responsibility for information collation and sharing exists with the HR department, organisations are required to manage these resources with the aid of HR technologies, as in a knowledge economy (Schweyer, 2004).

Moffet, McAdam and Parkinson (2003) believe that KM is focused on the macro-environment, organisational culture, people components, information processes and technological application. Furthermore, various factors have emerged to recognise knowledge as a priority for management, such as the following (Storey, 2001):

- Wealth is increasingly perceived to be derived from knowledge assets such as intellectual and intangible assets; and
- People are regarded as the locus of knowledge and, thus, also seen as the source of value creation. Following the emergence of corporate downsizing and redundancies that created a stir

among South African organisations, they are beginning to slowly rediscover the importance of people.

The limits of the traditional information systems for managing knowledge have been recognised as well as the potential of communication technologies and the Internet as a solution to improve the KM process. The use of the emerging technologies can be attributed to intense competition from outsiders and abroad.

Retail organisations will be investigated to determine the extent of strategic use of HRISs as the potential use of technological tools for knowledge storage, access and transfer; knowledge management interventions; and, finally, possible solutions to overcome resistance to HRISs. The results of the literature survey and the framework will lead to conclusions for the successful implementation of the HRISs in contemporary organisations to enable that the right information and knowledge is available timeously.

The researcher will attempt to bridge the gap by examining whether there is a significant relationship between knowledge management and HRISs, thus, leading to improved integration and a comprehensive understanding of the variables in a South African context. Considering the limited results surrounding the relationship between knowledge management and HRISs in HR, the researcher has felt it necessary to investigate the relationship using three different samples within the retail industry.

1.4 Objectives of the study

This fundamental research study aims to establish the impact that Human Resource Information Systems (HRISs) will have, as a tool, for KM in a HR environment. Specifically, the objectives of this study are:

1.4.1 To conduct literature reviews on HRISs and KM in an HR context;
1.4.2 To assess perceptions of KM in terms of knowledge assets, sharing and challenges;
1.4.3 To determine perceptions of HRISs in terms of their usage and technology;
1.4.4 To specify whether there is a relationship between KM (assets, sharing and challenges) and HRIS (usage and technology); and

1.4.5 To examine the influence of the biographical data on the perceptions of KM and HRISs, respectively.

1.5 Hypotheses

The following hypotheses have been formulated for the purpose of the study.

1.5.1 Hypothesis 1

There is a statistically significant correlation between the dimensions of knowledge management and the use of HRIS.

1.5.2 Hypothesis 2

There is a statistically significant correlation between the dimensions of knowledge management and technology.

1.5.3 Hypothesis 3

There is a statistically significant difference in the perceptions of KM dimensions (Knowledge assets, sharing and challenges) amongst the biographical variables.

1.5.4 Hypothesis 4

There is a statistically significant difference in the perceptions of HRIS dimensions (Use of HRIS and technology) among the biographical variables.

1.6 Limitations for the study

1.6.1 The results of the study are dependent on the instruments and the theory upon which the instruments are based. The investigation is limited to the extent to which respondents feel that they are able to respond in an honest way.

1.6.2 Due to the limited number of companies surveyed, one cannot infer the results as applicable or valid for all companies in the retail industry in South Africa.

1.6.3 Despite the limited sample and size in the current study, the findings may prove to be useful for guiding future research.

1.7 Structure of the study

Chapter One commences with an overview of the study.

Chapter Two conceptualises the framework of the study and provides an overview of the key variables of the study.

Chapter Three represents a comprehensive literature review of the HRIS.

Chapter Four continues the literature review of the exploration of the concept of Knowledge Management.

Chapters Two, Three and Four are significant to the research and serves as the underpinning philosophy to this dissertation and research process.

Chapter Five will present the Research Methodology, Design and Analysis. The justification for the selection of the methodology will be discussed as well as the process followed in obtaining the research data.

The results of the study will be presented in **Chapter Six** which will be displayed with the aid of graphs, tables and reports.

Chapter Seven will incorporate a discussion of the results whereby the findings will be compared and contrasted with previous research.

Chapter Eight concludes with recommendations and conclusions of the study.

1.8 Definitions

Data: refers to the description of raw facts, ideas and instructions for processing or communicating by humans or by automatic methods (Borghoff and Pareschi, 1997).

Electronic Document Management Systems (EDMS): A system that allows documents, spreadsheets, images, graphics and charts to be created, stored, retrieved and disposed electronically (Francois, Favre and Negassi, 2002).

Explicit knowledge: knowledge that has been translated into words and numbers and shaped legitimately and methodically into data, information, specifications and manuals (Abdullah, Selamat, Sahibudin and Alias, 2005)

Human Resource Information Systems (HRISs): a strategic tool that stores, generates, and transfers the relevant information, which may also be in the form of knowledge, to enable efficiency and effectiveness, for example, a human resource system for training, performance appraisals, learning and development, recruitment and selection (Haines and Petit, 1997).

Human Resource Management (HRM): is the function within an organisation that focuses on recruitment of, management of, and providing direction for the people who work in the organisation (Bratton and Gold, 2003).

Information: is the collection of data and facts that have been translated into a form that is more convenient to move or process (Choo, Detlor and Turnbill, 2000).

Information and communication technology (ICT): infrastructure that allows users to participate in a rapidly changing business environment with opportunities to use various techniques. ICT tools enable exploration, analysis and presentation of data and information (Jain, 2006).

Knowledge assets: Human (attitudes, perceptions and abilities of employees), organisational (brands, patents and other intellectual property) and relational (knowledge and acquaintances with customers, competitors and communities) and the intellectual capital of employees (Rodgers, 2003).

Knowledge challenges: Knowledge challenges refer to the difficulties experienced within the environment, organisation and employees who fail to promote and support a culture where employees willingly share and contribute to a wealth of knowledge for the benefit of all parties concerned.

Knowledge sharing: Knowledge sharing is characterised by an environment where management supports employees to regularly communicate and learn in various forms to deliver the right knowledge at the right time in the right format which benefits all parties involved.

Knowledge management (KM): consists of various strategies and processes in an organisation to identify cerate, share and promote effective use of information, expertise and experiences. Such experiences consist of knowledge, either personified in individuals (tacit) or in organisation processes (explicit).

Tacit knowledge: knowledge that lies within individuals and is learned informally in an unstructured way, which helps to create the knowledge-intensive organisation to compete successfully, responsibly and without discriminating. This provides users with the efficient access to past experiences and new ideas from various sources (Meso and Smith, 2000).

Use of technology to share information: refers to the function, operation, support or management of computer-based information systems, including software and hardware components to amass, protect, administer, transfer, input, output, and retrieve information.

Use of HRIS: Use of HRIS refers to the ability of the HRIS to store, manage and access information and knowledge for generic purposes and specific HR purposes.

1.9 Conclusion

This chapter provides a framework of the study in terms of the motivation, problem statement, objectives, limitations and summary of the research study. The next chapter discusses the conceptualisation of the study.

CHAPTER TWO
CONCEPTUALISATION OF THE STUDY

2.1 Introduction

The basis of good human resource (HR) decisions is good HR information, which, according to Grobler, Warnich, Carrell, Elbert and Hatfield (2006:40), provides both HR and line managers with the ability to facilitate decision-making. As HR transforms into a strategic business-partner role, the pressure on HR to deliver on expectations and contribute to the overall organisational objectives increases. HR is required to satisfy business needs with the availability of the right tools, at the right time to support business objectives and goals.

Pinnington, Kamoche, and Suseno (2004) explain that the appropriate management of HR in a knowledge intensive organisation requires the retention of competent employees who possess the needed expertise. Ferratt, Agarwal, Brown and Moore (2005) comment that a knowledge intensive economy demands that information technology (IT) play a pivotal role in enabling organisations to achieve objectives of operational effectiveness, as well as facilitating strategic competitive advantage.

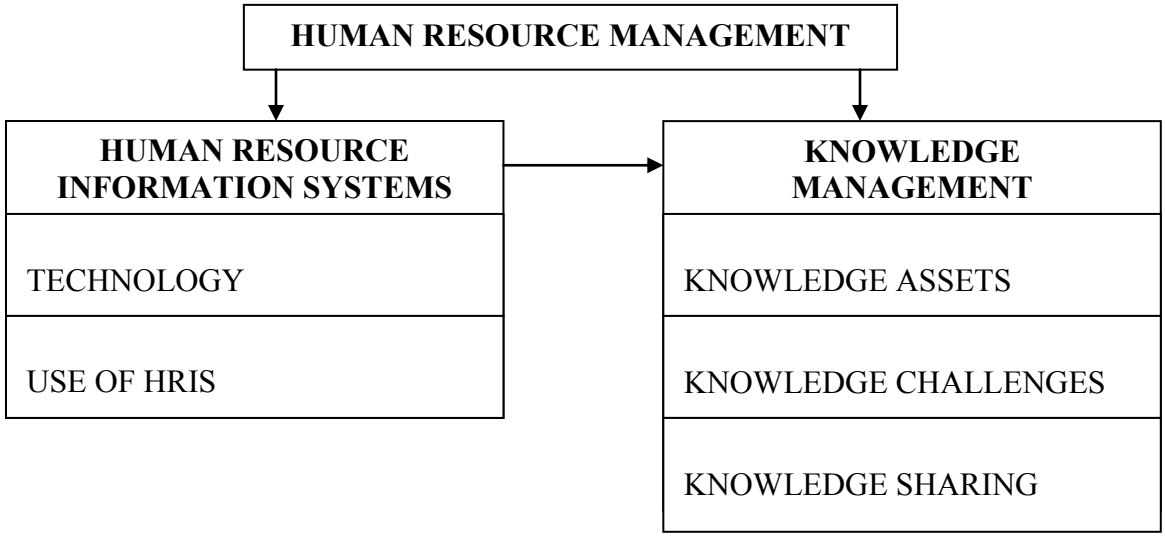
A Human Resource Information System (HRIS) shapes amalgamation between human resource management (HRM) and IT as it combines HRM as a strategic function with abilities to access and utilise key information. HR functions, such as applicant recruitment and tracking, training and development, performance management and compensation, are supported with the information system applications. The HRIS supports administration, planning and monitoring of information and knowledge.

Many associated HR functions, such as swift HR information sharing and feedback, would be challenging without technological support and assistance. HRISs cannot be used in isolation as the data and information that flows within the organisation transfers to knowledge. The strategic benefits of the HRIS is the ability to distribute critical knowledge to the right people, or make organisational knowledge available at a point in time when it is most needed. The HRIS can serve as a strategic tool for the HR department by ensuring that the HR information and knowledge is accessible, kept up to date, and flexible.

The HRIS should be used as a support for strategic HR as well as an enabling technology. The strategic use of HRIS is further highlighted by Anonymous (2009) as adding value to business-process improvements, talent management processes, employee and manager self-service and HR systems strategy. Hence, there is an obvious critical HR information input to a system that will enable the effective operation of the HR function. This information can be transformed to knowledge with the effective aid of a HRIS that bridges the gaps and allows for easy access and storage. To best demonstrate this view, the conceptual framework that follows will explain the intention of the researcher‟s frame of reference and research variables for the purpose of this study.

The purpose of this chapter is to clarify and explain the concepts of HRM, HRIS and KM used in this study, and to provide perspectives on the relationships and integration between the concepts (Figure 2.1).

Figure 2.1: Conceptual framework (derived from the study)



The conceptual framework, illustrated in Figure 2.1, highlights that HRM requires the strategic use of HRISs as a technological enabler for KM. The HR environment does not exist in isolation and the HR function also necessitates a reliable infrastructure to manage personnel and strategic data, information and knowledge. The relationship between the variables will now be discussed.

2.2 Human Resource Management (HRM)

Noe (2003) refers to HRM practices as management actions that directly relate to investments (time, effort and money) in recruitment, performance management, learning and development, compensation and benefits.

Eftekhari (2009:1) provides a simplistic view of HRM as a ***"collection of critical decisions, which are not normally based on solid data".***

Bratton and Gold (2003:7) define HRM as ***"the strategic approach to managing relations of employees which emphasises that leveraging people"s capabilities is critical to achieving sustainable competitive advantage".***

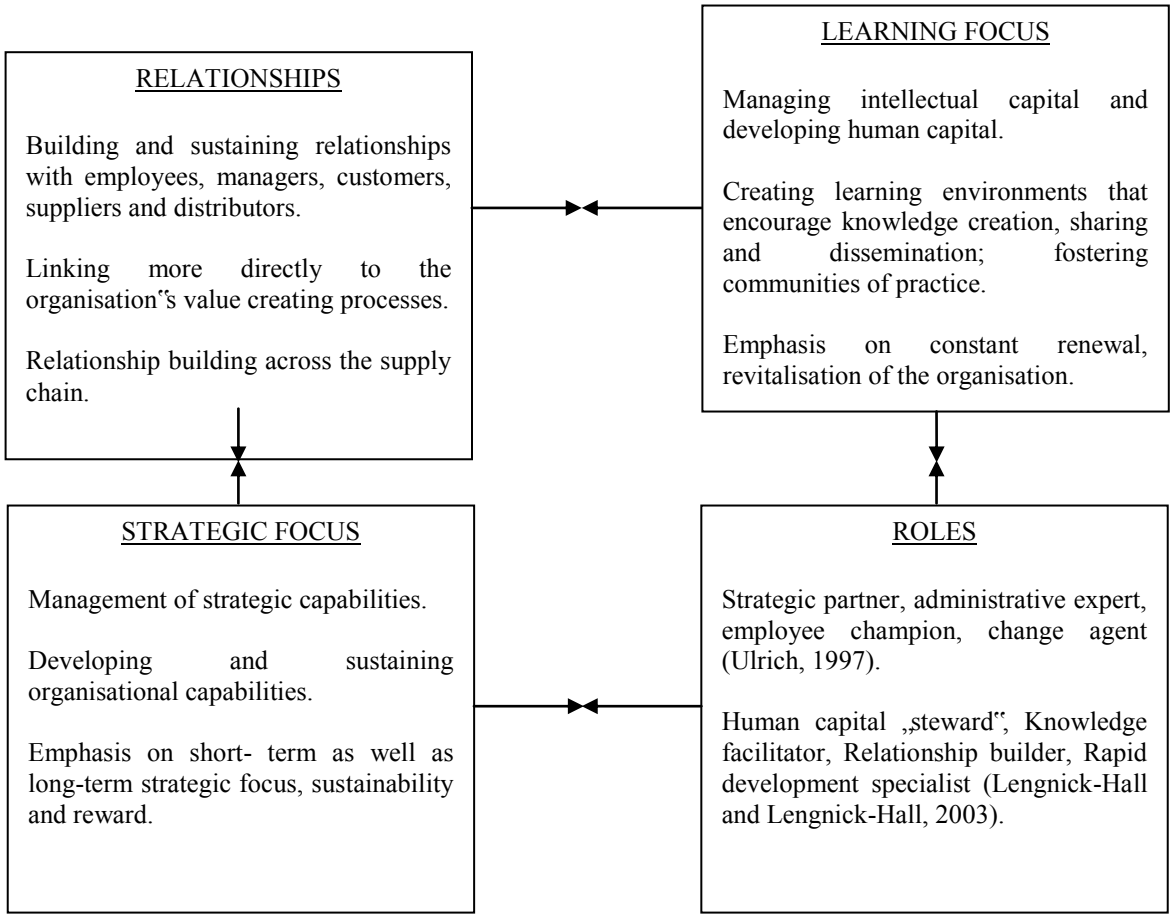
Definitions of HRM require HR to provide the necessary information to support the business needs timeously. The efficiency and strategic direction of HR must be aligned and available from the start. The demanding nature of business and focus on shareholder value requires HR to support strategic objectives (Storey, et al., 2001; Ball, 2001). Previous rigid structures are no longer relevant as the focus shifts to critical people issues. Grobler, et al., (2006) reports that for HR professionals in South Africa, conventional HR tactics, which were evident in cultures with command and control dominations, are paving the way to new tactics characterised by enhanced employee commitment, collaboration and communication.

HRM has to focus on providing maximum value for the business with the benefit of merging the HR functionality and information systems within HR. As illustrated in Figure 2.1, HRM relies on the HRIS to provide the relative data and knowledge to support HRM. An inclusive base of accurate, reliable HR information that is easily available to decision makers is critical to HR"s ability to conduct its key functions. HR information and knowledge is linked and integrated with other information systems, disintegrating departmental barriers. As a result, HR knowledge can now be stored and accessed using the HRIS. The information is customised and aligned to the organisation"s eligibility rules, individual demographics data and information available in the knowledgebase (Becerra-Fernandez, Gonzalez, and Sabherwal, 2004). Research conducted by Afiouni (2007) argues that the strategic combination of the HRM initiative with KM will assist to enhance organisational performance as well as increase knowledge and skills.

Theriou and Chatzogbu (2005), cited in Sewerin, Holmberg and Benner (2009), suggest that the recent emphasis on KM focuses on HRM practices such as recruitment, training, compensation,

work design and its interaction with organisational learning and knowledge. These relations are further demonstrated in Figure 2.2.

Figure 2.2: Mapping the relationship between knowledge management and human resource management



Source: Martin, B. (2000). Knowledge Management within the context of management: an evolving relationship. *Singapore Management Review*. 22. (2). p. 17-36.

Relationships: Relationships should evolve as a result of shared responsibilities among management, employees and customers for HRM (Soliman and Spooner, 2000). With the tool of excellent communication, networks are developed for collaboration and relationship building. This would aid the KM strategy formulation and implementation.

Strategic Focus: HRM strategic focus is the development of human capital and KM. Human capital places emphasis on the growth of a precise set of competencies and capabilities. This would

then ensure integration of the individual and the team at the organisational level (Soliman and Spooner, 2000).

Learning: HR practitioners in the knowledge economy should work toward creating the need for learning by the implementation of an environment where employees acquire, share and disseminate knowledge. The role of the HR manager includes the ability to manage intellectual capital and develop human capital (Soliman and Spooner, 2000).

Roles: HRM is characterised by a new set of roles such as facilitator and relationship builder, to assist with the generating and sustaining of organisational capabilities. For example, the knowledge facilitator emphasises learning and development by creating the environment conducive to learning (Soliman and Spooner, 2000). Research conducted by Yahya and Goh (2002) suggest that HR focus on employee development should be centred on attaining value, leadership and problem-solving skill.

The functions of relationships, strategic focus, learning and roles do not exist in isolation and are dependent on each other to facilitate the learning culture. Martin (2000) recommends that HRM be used as a tool that provides insight on how to manage learning, by acting on lessons learnt and identifying best practice behaviours. HRM can facilitate the culture of continuous learning, knowledge creation and transfer for application.

A technological tool that supports such initiatives is the HRIS. For HR professionals to have access to such accurate and reliable information and knowledge about their employee base, it is critical to directly access influential organisational data and benchmarks. This data and information must be accessible anytime, anywhere, from any location; and available with the support of the HRIS.

2.3 Human Resource Information Systems (HRIS)

Tannenbum (1990) defines HRIS as ***"a technology-based system to acquire, store, manipulate, analyse, retrieve and distribute pertinent information regarding an organisation's human resources".***

According to Broderick and Boudreau (1992), cited in Ngai and Wat (2006), HRIS is defined as ***"the composite of databases, computer applications, and hardware and software necessary to collect/record, store, manage, deliver, present, and manipulate data for human resources".***

The introduction of HRISs was long overdue and has rapidly developed into cost-saving systems for organisations. Over the last several years, increased literature refers to the HR system that assists management by providing critical data to make key business decisions instead of a monitoring and tracking organisational function (Gasco, Llopis and Gonzales, 2004). Preliminary research indicates that a key success factor for HRIS operations includes key outcomes such as organisational competence (Thomas, 2001; Pierce and Newstrom, 2002). Executive decision-making, team integration, training and development and reporting frameworks contribute to the success of the HRIS.

The interrelatedness in Figure 2.1 depicts the ability of the HRIS to service KM in the HRM environment. In addition to enabling corporate goals and strategy, the HRIS allows an organisation to gather information about the workforce in general so that it can measure itself against its own goals and industry standards. Once created, the system can manage itself as it collates, organises, stores and retrieves information in an effective manner. It assists to collaborate workflows and generate employee tacit and explicit knowledge with an easy to use interface.

The overall objective of the HRIS aims to ensure that the right information and knowledge is available to the right people at the right time and the right place to make the right decisions. Desouza and Awazu (2003) explain that a properly-aligned HRIS plays a critical role in the contribution to the management of organisational knowledge. For example, the HRIS enables double-loop learning feedback which facilitates organisational change, communication, decision-making, and shared visions (Argryis and Schon, 1996, cited in Mayfield, Mayfield and Lunce, 2003). The HRIS can configure and constitute strategic initiatives such as delivering knowledge management with relevant training in cost-and time-effective ways.

Barney (1991) agrees that, while knowledge resources are valuable, yet difficult to imitate, these resources are identified as intangible and tangible assets such as an organisation‟s management skills, organisational processes and routines, and the information and knowledge it controls. The starting point of any HRIS should be the ability to provide reliable HR information and knowledge upon which to make strategic decisions. This includes knowledge capture (including tacit knowledge) and formation by creating structure from unstructured information.

Armstrong (2000) explains that KM is a developed form of HRM that uses IT as a supporting infrastructure in the human-interface process. The strategic role of HR in KM facilitates diffusion

of learning through work sessions, training projects and conferences. Garavan, Gunnigle and Morley (2000) suggest that HR builds the learning organisation to support KM by:

- assisting employees to produce and apply knowledge; and
- formulating suitable networks and connections in learning.

KM is a key intervention that includes the creation, generation and sharing of an affluent collation of information captured with the ability to:

- build and create from this knowledge;
- apply tacit knowledge to existing problems; and
- develop new techniques and processes.

For example, the records and compliance area has specific information retention which links to the data base that adds to knowledge-management functioning of the HRIS. The records and compliance function supplies critical data for KM as it is required to utilise the information contained in the records as well as capture and collate formerly tacit and undocumented versions of important organisational knowledge (Mayfield, Mayfield and Lunce, 2003). Using these capabilities, KM function can conserve the organisational memory that is required for increased organisational performance, and make certain that suitable communication of such knowledge permeates within the organisation. Knowledge transfer within the HRIS is another chief responsibility that the communication and integration function fulfils as the HRIS consists of technological infrastructures that enable the communication of necessary information and integration in an appropriate fashion (Mayfield, Mayfield and Lunce, 2003).

The HRIS modules linked to KM include compensation and reward, performance appraisal and reward, employee turnover, training and development and recruitment.

The dimensions of the HRIS to support HRM and KM are categorised as technology and use of HRIS.

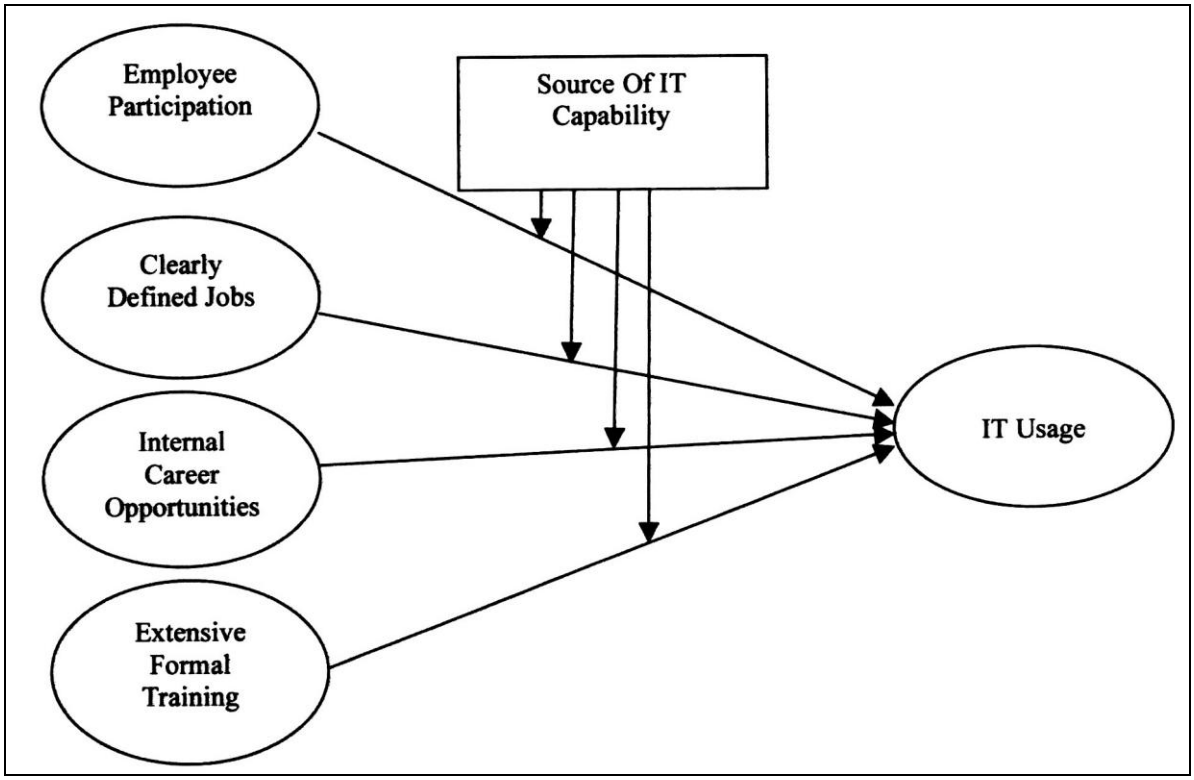
2.4 Technology

Technology aligned to HR can improve efficiency and, if cost effective, the implementation of such applications will become more favourable. For example, the Internet has become a favourable platform for the HR Manager to conduct activities such as recruitment, training and networking (Grobler, et al., 2006). The intranet and extranets are also useful to connect people within an organisation as an information hub and provide external access to employees within an industry respectively.

2.5 Use of HRISs

Lee and Lee (2003) indicate that HRM practices influence and collaborate with IT innovation and adoption (Figure 2.3).

Figure 2.3: Human resource management practices in organisations



Source: Lee, C.S. and Lee, C.H. (2009). Effects of HRM Practices on IT Usage. ***Journal of Computer Information Systems*****. 50. (2). p. 84.**

Lee and Lee (2003) draw on the following HRM practices:

- Employee participation – IT transfers and disseminates data and information to and from employees within different structural levels to promote involvement in decision-making;
- Cleary defined jobs – Employees have access to their job descriptions, expectations and requirements with the aid of clearly documented job-specific records supported with an information system or any IT capability to assist in completing a job;
- Internal career opportunities – Organisations that encourage a learning culture and „home-grown management" should motivate employees to invest time to learn and use further IT to develop their learning and career paths; and
- Extensive formal training – Extensive formal training motivates employees to embark on further exigent responsibilities and be more dedicated to organisational goals which are supported by IT during the learning, training and development process.

Florjancic, Bernik and Bernik (2003) suggest that new information techniques can be integrated in the HR technology and the key IT tool used within the HR environment is the HRIS. Florjančič, Bernik and Bernik (2003) further explain that the HRIS can be used for existing HR processes, or to calculate or classify the data and information to support HRM decisions. The outcome is integration of information into one infrastructure and its consequent creation of new HR knowledge.

2.6 Knowledge management

Pillania (2009) views KM as a strategic management concept because knowledge is recognised as a key strategic resource and it is a unifying concept drawing from various disciplinary areas like information systems and HR management.

Shimemua and Nakamori (2003:1) provide a series of definitions of knowledge which can be summarised as:

- "knowledge is organised information applicable to problem solving;
- knowledge is information that has been organised and analysed to make it understandable and applicable to problem solving or decision making;
- knowledge is reasoning about information and data to actively enable performance, problem-solving, decision-making, learning, and teaching".

Pillania (2007) defines KM as a process of generating, sharing, applying, renewing and updating knowledge in a systematic, planned and purposeful manner to achieve organised goals and objectives. KM usually measures the management of people, processes and technology as well as the emergence of HRM into KM initiatives (Scarbrough, et al., 2004).

"Knowledge management is defined as the holistic combination of measures for managing people, processes, and technology and the explicit integration of human resource management into knowledge management initiatives" (Scarbrough, et al., 2004).

Robinson, Anumba and Al-Ghassan (2005) define KM as the conversion or exploitation of knowledge as an asset for organisational strategy that facilitates continuous improvement.

2.6.1 Typologies of knowledge

Edwards (2008) suggests that organisations view the knowledge resource as an asset, similar to traditional or financial assets. Consistent with Churchman‟s (1972) research that reflected knowledge as „residing in the user rather than in the collection of information‟, contemporary research clearly differentiates between explicit and tacit knowledge.

2.6.1.1 Explicit knowledge

Explicit knowledge is conceptualised by Becerra-Fernandez, Gonzalez and Saberwal (2004:19) as ***"knowledge that has been expressed into words and numbers that can be shaped formally and systematically in the form of data, specifications and manuals"***.

The modern view of explicit knowledge is defined as a key organisational resource that is increasing its strategic value as the character of work progresses toward the hub of knowledge. Explicit knowledge is evaluated through explicit demonstrations of knowledge sharing and the extent to which employees exploit their knowledge competence (McEvily and Chakravarthy, 2002).

Explicit knowledge should be communicated with ease of understanding and for the user to interpret and use it. It will, however, require, to some degree, processes of reflection and refinement before users can base their decisions on the knowledge accessed.

2.6.1.2 Tacit knowledge

Literature views tacit or implicit knowledge as complex to express and verbalise, therefore, difficult to collaborate with as it includes insights, intuitions and hunches (Mohamed, Stankosky and Murray, 2006). Tacit knowledge is generally located within the minds of an organisation‟s employees, and more difficult to access and use. Mohamed, Stankosky and Murray (2006) further refer to tacit knowledge as personal knowledge utilised by employees to complete their work productively. Such information resides within conversations, projects, processes, and in people‟s heads, which means that the unstored knowledge can be difficult to retrieve when required. Strategic information about strategy and processes are usually inherent in an individual‟s mind and often more difficult to capture and use, unless structured into a system and transformed for easy knowledge sharing.

Teece (2000) explains that people are no longer „just employees" as organisations have realised the valuable asset that an employee encapsulates. HR managers are required to build and implement the HR policies, systems, and practices that will extend the organisation"s assets and improve its performance.

2.6.2 Knowledge assets

Lepak and Snell (1999) explain that competitive advantage no longer originates from tangible assets and natural resources but on how successfully organisations manage knowledge. A basic principle of the human capital theory is that organisations do not own the knowledge; individuals do. Organisations may access human capital by default but may not sufficiently use it to attain strategic impact (Wright, Dunford and Snell, 2001). Thus, for human capital to create value, organisations require effective management of people to ensure well-developed HR practices and a conducive learning environment that engages people to display and share their skills and know-how to create value.

2.6.3 Knowledge sharing

Scarbrough and Carter (2000) argue that those HR departments that support these best practices will most likely ensure a level of dedication and enthusiasm to facilitate knowledge sharing and ensure KM success. Kalkan (2008) agrees that the HR department is crucial for knowledge-management activities and top management is required to encourage HR professionals to be dynamic in the knowledge sharing process in order to co-ordinate the relationships between functions of HRM and knowledge management.

A significant number of experts have warned that HRM may be confronted with extinction if there is a lack of response to changes created by the transfer from the traditional HRM to the knowledge-based organisation (Ulrich, 1997; Lengnick-Hall and Lengnick-Hall, 2003 and Saint-Onge, 2001). The rise of the knowledge economy strengthens focus on the creation of the learning environment and the sharing of knowledge in an organisation. Grant (1997), cited in Price (2004), and argues that HRM can enhance an organisation"s competitiveness through the aid of an influential knowledgebase of a business.

Scarbrough and Carter (2000) explain that the best practice for HRM develops a set of „best practices" that facilitate and encourage knowledge sharing within an organisation. The success of any KM initiative relies on having suitably motivated and competitive employees assuming an active role that encourages sharing (Robertson and O'Malley Hammersley, 2000). Knowledge sharing can, however, pose difficulty when certain challenges arise.

2.6.4 Knowledge challenges

There are further highlighted areas that may lead to the failure of the KM initiative. Carrillo and Chinowsky (2006) and Egbu (2004) provide further points for consideration to prevent KM failure:

- "an incoherent knowledge vision;
- lack of ownership of the knowledge vision;
- lack of gratitude of knowledge as a critical asset;
- lack of an information-sharing culture and culture;
- unsuitable processes or instruments for measuring and valuing knowledge;
- insufficient standardised methods;
- rigid organisational structures;
- time limitations on knowledge experts;
- fear of the use and application of IT tools for KM (Technophobia);
- the „„knowledge is power syndrome"; and
- lack of an apparent purpose, shared language and communication".

To conquer the difficulties of knowledge management, organisations have to acquire the necessary approaches and activities to develop the effectiveness of the KM process. The KM literature refers to the relevance of effective communication in KM and that requirement for a shared understanding that enables the capturing and sharing of knowledge. Fong (2005) also confirms that willingness and motivation to share information are important contributors to effective KM.

2.7 Conclusion

This chapter explained the key concepts HRM, HRIS and KM. The concepts were defined, their use briefly explained and the relationships among the variables were introduced. The HRIS dimensions (Technology and use of HRIS) were explained, as well KM dimensions (knowledge assets, knowledge sharing and knowledge challenges). Chapter Three explains the variable HRIS in detail.

CHAPTER THREE
HUMAN RESOURCE INFORMATION SYSTEMS (HRISs)

3.1 Introduction

Well-designed and correctly utilised HRISs align HR related goals and management practices with the approaches and goals of the organisation. Most HRIS software provides detailed, up-to-date employee information that tracks most HR functions. Managers can process quick queries and access customised data for greater efficiencies. By understanding the business requirements of an HRIS and the HRM strategies that they must support, organisations can structure a series of solutions to satisfy those needs. Runny (2006) declares that HRISs reduce costs by streamlining critical HR functions and enhancing efficiency by eliminating the manual, paper-based processes and duplication of work.

This chapter explains the need for HRIS as a tool for HRM, the components and benefits associated with the HRIS as well as HRIS designs, types and modules. It concludes with the explanation of HRIS development in South Africa and its reasons for failure and data security issues. The Promotion of Access to Information Act 2000 is also discussed.

3.2 HRIS as a strategic tool for HRM

Sacht (2006) refers to the need for a partnership role between line management and HR professionals in order for the HRIS to assume many of the routine administrative tasks previously handled by the HRM department. This perspective is consistent with the current pressures of the HR department which reflect HR managers who have assumed less responsibility, and are more reliant upon team members to make strategic decisions based on learning and current knowledge. This has resulted in a need for flexibility, independence and work structures that foster employee empowerment, collaboration and team work (Sacht, 2006). The HRIS can provide strategic opportunities to the HR team. The ability of the HRIS is critical to access and compare, share, and align performance and organisational objectives.

Smith (2000) explains that collaboration within HRISs ensures improved sharing of information, among teams, reduced times for project completion, reduced errors, elimination of „re-inventing the wheel", and improved interrelations.

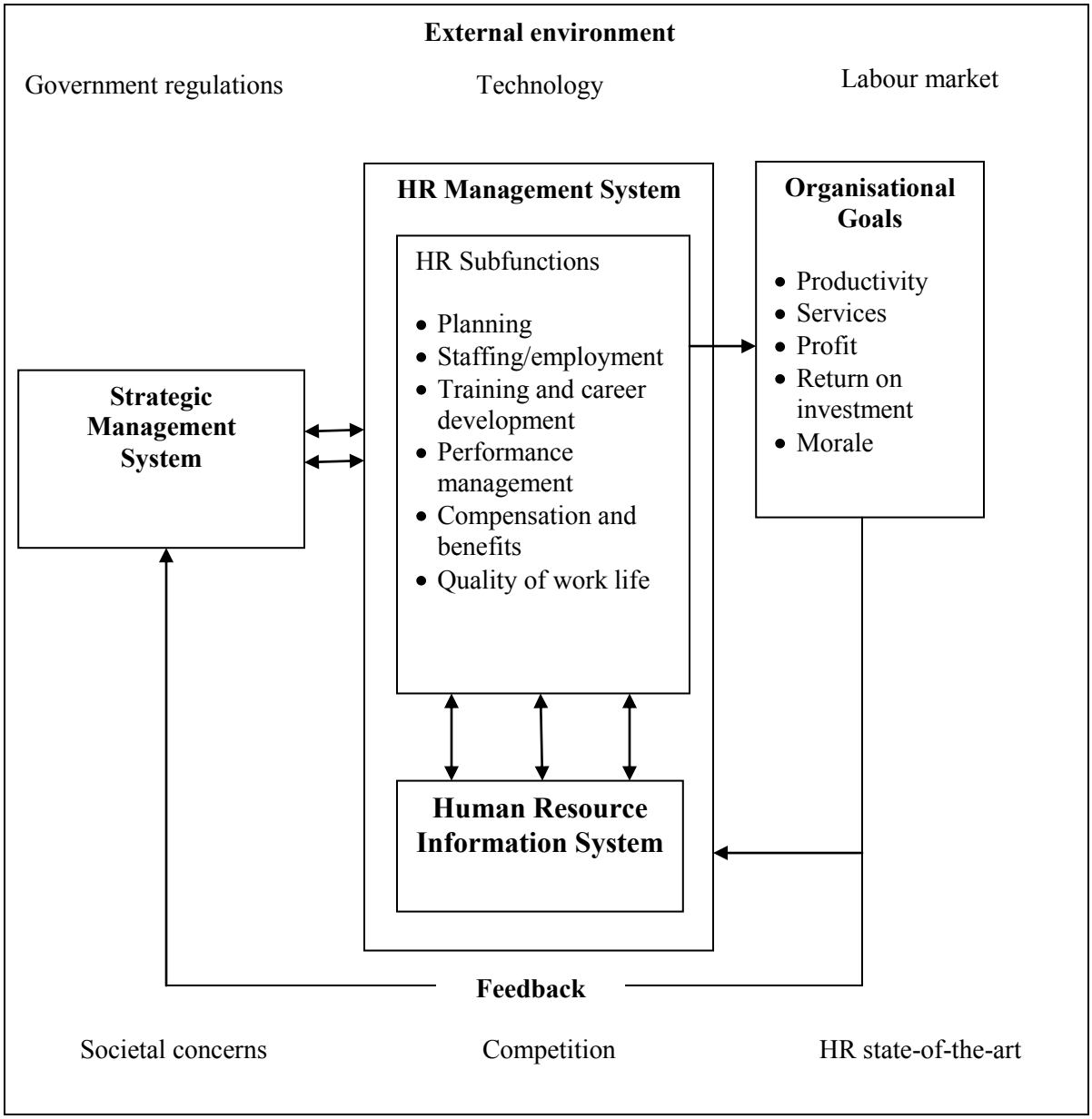
Wei (2009) provides a complimentary view that the HR technology could build their complete HRM with focus on decision support. HRISs have to provide effective solutions as a quicker access to reliable information – required to make strategic decisions (Minneman, 1996). The HRIS is configured to offer such support, with detailed components that offer specialised functions.

3.3 Nature and Components of HRIS

HRISs are often part of the broader Management Information System of HRM. Grobler, et al., (2006) highlight that the HRIS functionality includes all HR data such as recruitment-related information and retirement statistics.

Figure 3.1 illustrates the nature of the HRIS within the organisation.

Figure 3.1: Organisational functioning

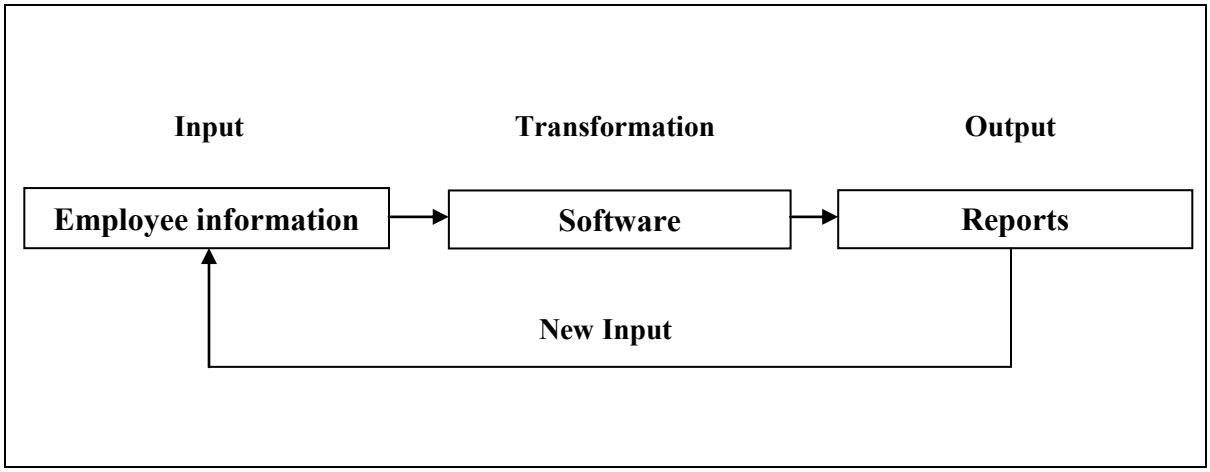


Source: Kavanagh, M. J., Guetal, H.G. and Tannenbaum, S.I. (1990). ***Human Resource Information Systems: Development and Application*****. PWS-Kent: Boston, MA. p. 21.**

All components are interrelated and include the HR Management System (comprising of the HRIS), the strategic management system, the external environment and organisational goals.

Grobler, et al., (2006) further characterises HRISs as an open-system model consisting of three main activities – inputs, transformation and outputs (Figure 3.2). The feedback components make certain that the system delivers on its intentions and expectations.

Figure 3.2: Functional components of a HRIS



Source: Grobler, P; Warnich, S; Carrell, M.R; Elbert, N.F and Hatfield, R.D (2006). *Human Resource Management in South Africa*. 3rd edition. South Africa: Thomson Learning. p. 41.

Personnel information is entered using the input function, for example, by scanning or manual input of information. The transformation function shifts and maintains the information with updates and additions after data has been captured into the system. The output function is the most valuable as the data is then used for decision-making or presentation of analysis (Kovach, Hughes, Fagan and Maggitti, 2002).

The HRIS project team identifies the specific software and hardware components and the appropriate service providers that assist with solutions to support HR information management strategies. The decision to select certain HRIS products is valid when they support the organisation‟s strategic direction (Minneman, 1996) and the intended use of the system.

3.4 Uses of HRIS

HRISs ensure the systematic collation, organisation, retrieval and validation of all HR-related data required in the process of managing the business and employee relations (Ball, 2000).

Consistent with research conducted by Beckers and Bsat (2002), Kovach, Huges, Fogan and Maggitti (2002) list several administrative and strategic advantages. HRISs can:

- raise competitiveness by enhancing HR operations;
- create a larger number and variety of HR-related reports;
- shift the focus of HR from the processing of transactions to strategic human resource management;
- ensure employees are a part of HRIS; and
- re-engineer the entire HR function of organisations.

A plethora of potential uses and benefits exist with the proper utilisation of the HRIS that incorporates a form of knowledge within an organisation.

3.4.1 Accessing information quicker and easier

Ball (2001) states that using a HRIS for administrative information purposes reduces cost and time and provides analytical information solutions. This includes increased efficiency and speed, reduced errors and cost (for example, paperwork is minimised, forms are standardised and information is gathered and generated at a quicker rate). Bussler (2001) agrees that this form of HRIS can coordinate with other information systems to provide valuable information to all decision makers and create an awareness of potential difficulties and dynamics.

HRISs are flexible, easy to influence to match the requirements of the data users and mobile to encourage communication among various organisations which are nationally or internationally dispersed (Swanepoel, et al., 2000). Record processing efficiencies are now accessible to any size organisation (Ulrich, 2001).

3.4.2 Accurate information

The starting point of any HRIS should be the ability to provide reliable information upon which to make strategic decisions. This includes data and information capture and creation by introducing structure to unstructured information.

An overall purpose of the HRIS includes the creation of rich information captured and the ability to construct and create from the knowledge as well as brainstorm and applies tacit knowledge to current problems; develop unique techniques, procedures and products (Becerra-Fernandez, Gonzalez, and Sabherwal, 2004).

Haldin-Herrgard (2000) comments that modern information technology can facilitate the transfer of explicit knowledge, but tacit knowledge can become challenging to disseminate technologically.

Ngai and Wat (2006) add that the common uses of HRIS include enhanced precision, the provision of timely and swift admission to information, and the saving of costs.

3.4.3 Sound decision-making

Sadri and Chatterjee (2003) agree that HRIS capability includes faster decision-making capability and the growth, preparation and management of HR as the data can be easily stored, updated, categorised and analysed. The ability to make strategic decisions timeously differentiates high-performing organisations from those non-performers in the industry. High performers make strategic decisions to capitalise on new opportunities and to use innovation that keeps them at the vanguard of the industry competitiveness. HRISs, that make the data and information accessible as a solution, can assist organisations to become more successful and cost-effective by reducing lead times associated with research, problem solving, and decision making. The suitable collation, documentation, recovery and reprocess of information can enhance organisation decisions, simultaneously reducing organisation interruption, and improve competency maturity of employees (Edwards, 2008).

Maguire and Redman (2007) contribute that any HRIS must reflect information requests for improved decision-making and must act as a supporting tool rather than dysfunctional in the organisation.

3.4.4 Sharing and generating information

By sharing and distributing information, an organisation can evolve and reproduce information and experiences into usable knowledge which can be accessed (Abdullah, Selamat, Sahibudin, and Alias, 2005).

A valuable benefit of the HRIS is its ability to distribute the information to the right people, or make organisational information available at a point in time when it is most needed. Rather than recruiting individual experts or „renting" their expertise for a while, companies can gain access to the information bases of others by setting up various forms of collaboration and storing this within the HRIS.

Ward (2007) defines a „company knowledge base" ***"as one of the central intermediate products of the knowledge-processing effort which implies the total sum of the useful and competitive knowledge, both explicit and tacit, which resides in the heads or working documents and databases of everyone in the organisation".***

Tsoukas and Vladimirou (2001) recommend that employees should not be compelled to share their information with others; but the presence of a suitable infrastructure should facilitate this opportunity. Mayfield, Mayfield and Lunce (2005) explain that HRISs create key contributions to information management by accelerating organisational learning. For example, most HRISs provide double-loop learning feedback to encourage organisational discussion and decision-making (Argryis and Schon, 1996 cited in Mayfield, et al., 2005).

The HRIS is not a single constituent on its own; instead it is designed with varying components that make up the greater HRIS (Grobler, et al., 2006).

3.5 Structural design of HRIS

The components of the HRIS are designed to accommodate the functions of each unit. For example, the size of the HRIS differs depending on the company infrastructure as well as requirements. The objective is to facilitate a design that will provide and facilitate information on company-wide data. Grobler, et al., (2006:46) tabulate the different configurations of the HRIS in Figure 3.1:

Table 3.1: Features of the various HRIS design configurations

Distributed	Independent
• Central facility with other sites connected • Strong management control • Increased user flexibility and access	• Multiple systems • Minimal management control • High user access and flexibility • High costs and redundancy of functions
Hybrid	**Concentrated**
• A mix of system designs • Allows for centralisation of certain functions and decentralisation of others • Level of management control varies • Flexibility levels varies • Higher costs than other configurations	• Centralised computer facility • Strong management control • Reduced costs • Limited user flexibility and access

Source: Grobler, P; Warnich, S; Carrell, M.R; Elbert, N.F and Hatfield, R.D (2006). *Human Resource Management in South Africa*. 3rd edition. South Africa: Thomson Learning. p. 46.

The different configurations highlighted in Table 3.1 outline the features of the different types of HRISs evident in organisations. The **Concentrated HRIS** allows control and accountability housed in one central location which is the extreme opposite of the **Distributed HRIS** where other sites are connected to the central facility to allow a certain degree of flexibility of control. The **Independent HRIS** allows different designs of the HRIS which may or may not be linked to one another whilst the **Hybrid HRIS design** appears to be the most useful as it allows organisations certain functions of the system to be centralised whilst others are left to the discretion of the users.

Grobler, et al., (2006) further refers to three different types of HRISs within a configured HRIS. The three types of HRISs are clearly explained below.

3.6 Types of HRISs

The types of HRISs offered are based on the features made among information systems. The characteristics depend on the range of file storage required to interactive decision-making

capabilities. Combinations of these types are also possible within an organisation. Grobler, et al., (2006) explains three distinct types of HRIS:

- Electronic data-processing (EDP) level – assists with the automated processing of standard information. It allows the data capture, storage and processing for routine functions such as payroll;
- Management Information System (MIS) – integrates the ability to plan and generate reports such as issuing information about training statistics; and
- Decision-support system (DSS) – assists higher levels in the organisation with analysis, planning and projection for future strategic needs.

The type of HRIS dictates the modules necessary for the HR team. The next section explains the different modules available.

3.7 Modules of HRISs

There must be synergy with the various HR functions to enable optimal functioning within each function as well as across the system. Managers should be able to easily access the information they require to legally, ethically, and efficiently make decisions related to the business success (Ball, 2000).

Swanepoel, Erasmus and Van Wyk (2000) contribute that ***"HRISs can be used in all areas of HRM functions including various personnel administrative matters, workforce planning, employment (recruitment and selection), performance management, training and development, career management, remuneration and labour relations".***

A few of the above mentioned HRM modules (functions) are explained below.

3.7.1 Applicant tracking, recruitment and selection

Applicants can be tracked and resumes are stored with detailed information available to match applicants to vacant positions (Grobler, et al., 2006:51).

Okpara and Wynn"s (2008) recruitment and selection research findings deduced eighty-three (83) percent of interviewees had formal systems for recruiting and selecting new employees. A critical need for the knowledge organisation is the recruitment of competent individuals who have the

ability to share expertise, skills and knowledge. A key advantage is to recruit employees who possess knowledge that may not already exist in the organisation. HRISs enable recruitment and selection initiatives that identify the individual who will make use of their talents and knowledge as well as expand levels of knowledge.

According to Bohlander and Snell (2007:56), continual development of superior knowledge, skills and experiences can best be supported to build capital by leaders identifying, recruiting and selecting talent.
Robertson and Hammersley (2000) noted that the shift in recruitment methods has evolved from traditional competency-based interviewing to asking candidates to provide evidence that demonstrates their ability to create, generate and facilitate knowledge. Employees were selected based on how well they met the requirements of the knowledge behaviour.

Kalkan (2008) recommends that effective HRM practices that magnetise and retain employees with the skills, behaviours and competencies must be targeted to add value to the organisation‟s knowledge abilities.

3.7.2 Performance management and appraisals

Previously, the relationship between HR systems and performance was commonly referred to as undefined and unclear due to the uncertainty of the system‟s impact on employee performance (Purcell, 2000, cited in Gibb, 2001). Mayfield, Mayfield and Lunce (2005) contribute that the need for higher quality HR work competence and performance has placed pressure on organisational productivity gains and competitive advantage through HR systems.

HRIS software can automatically alert managers and employees to critical appraisal tasks by tracking core-competencies needed as well as suggestions for employees requiring training (Grobler, et al., 2006). HRIS appraisal capabilities enable those organisations with locations geographically dispersed to manage consistently across operations. The ability to measure tacit knowledge during such appraisals would be difficult. To overcome the challenge measurement, tools must be organisation specific and linked to individual job descriptions and competencies.

Yahya and Goh (2003) suggest that the performance appraisal, for example, should be the foundation for evaluating an employee‟s knowledge-sharing practices as well as contribution for targeting knowledge sharing contributions.

The performance management system must encourage knowledge sharing as it is in the employees‟ best interests to communicate their knowledge base and contribute to projects for future inclusion (Robertson and Hammersley, 2000). Yahya and Goh (2002) investigate the performance appraisal characteristics associated with knowledge sharing and discovered that customer feedback is used for promoting knowledge-sharing practices, knowledge transfer and knowledge application.

3.7.3 Aligning performance compensation

Integrated HRIS applications help the organisation promote and compensate employees with easy to define job-specific competencies for critical roles in the organisation. HR business processes are then easier to facilitate and assists to develop the business‟s skills toward organisational goals. The employee can benefit from an organisation-wide succession strategy that includes competencies, skills and career-development plans by integrating performance, development and remuneration modules that attract and retain one‟s own retention and attraction of key personnel (Currie and Kerrin, 2003).

Focus on the promotion of group performance, sharing of knowledge and innovation of thinking should be the focus point on knowledge-centred compensation and reward system. Rewards for employees should be based on their individual as well as group contributions to performance (Yahya and Goh, 2002).

3.7.4 Training and Development

Within a training and development module, managers and employees are able to schedule themselves to attend courses without conferring with the HR department and attached paperwork. Grobler, et al., (2006), recommend that the organisation track skill shortages first to analyse the gap between the current and desired performance levels and then identify the necessary learning intervention to bridge talent gaps. Working towards the vision also requires the business to always ensure that the right people are available at the right time, in the right jobs. The ability for the HRIS to allow insight into the strengths and weaknesses of the organisations allows senior management

to identify potential gaps and potential future needs while current employees can manage their careers and develop their full potential.
The function can be quite extensive as it provides all course information, requirements, delegate information and course fees. Training can be tracked and aligned to individual development plans and career plans.

Knowledge organisations, referred to by Ward (2007), as „a learning community guided by a spirit of creative discontent", focus on continuous learning, training and development to enable access, sharing and utilising of information. Learning would occur through sharing experience, observation, and experts. Studies revealed that training, related to creativity, is a contributor to the facilitation of knowledge documentation, knowledge transfer and knowledge creation (Yahya and Goh, 2002). The overall purpose is to develop people who are able to tap into the information and develop it to organisational knowledge.

Considering the changing demographics of South Africa and the devastating effect of HIV and Aids, organisations are obliged to ensure a readily available talent pool for replacement. To enable this pool, learning and development plays a pivotal role to ensure well-trained successors.

3.7.5 Employee assimilation and retention

HRIS functions of employee assimilation and retention are practices that support a knowledge-based organisation. Stromquist and Samoff (2000) predict that new knowledge-based organisations focus on working groups without hierarchies where all team members contribute equally to the solution of complex challenges.
People develop the required knowledge to help an organisation thrive. The role of a knowledge worker is essential to ensure that employees are assimilated correctly; knowledge is developed and retained throughout their career. The assimilation of new employees who have just begun their career is critical. Organisations may spend excessively by recruiting and selecting the right people, but insufficient time is spent on the employee's induction in the company, and his/her subsequent stay. Various aspects of knowledge-information systems can be used to assist a new employee assimilate into the organisation. Examples include "lessons learned" knowledge-bases, expert locators, knowledge-exchange lunch sessions and communities of practice.

The risk of losing valuable employees is evident in organisations that employ specified knowledge (Robertson and Hammersley, 2000). Hislop (2003) links commitment to the job to knowledge sharing. The intention to remain in/leave the organisation is as important if not more than owning a positive attitude towards knowledge sharing.

Appropriate HR functions such as efficient recruitment, selection, training and compensation and reward systems as well as managing change and conquering resistance to sharing information are required by the HR practitioner who uses the HRIS (Iles, Yolles and Altman, 2001). Ball (2001) identified further HRIS feature usage including feedback, skills matching, applicant screening, and evaluation and salary information. The strategic use of HRIS is further highlighted by Anonymous (2009) as adding value to business-process improvements, talent-management processes, employee and manager self-service and HR-systems strategy. Hence, there is an obvious critical HR information input to a system that will enable the effective operation of the HR function. This information can be transformed to knowledge with the effective aid of a HRIS that bridges the gaps and allows for easy access and storage. However, the development of such a system in South Africa has not received such recognition and success.

3.8 HRIS development in South Africa

South African companies are required to value the increased sophistication of HR systems as they take over many of the humdrum administrative tasks that previously had to be managed by HR departments only. HR managers then focus on more strategic business areas. There are some companies, including Nestle, who have automated mundane HR administrative tasks, including payroll and administration with the use of the HRIS. This has resulted in a decline of required HR employees and the opportunity to focus more on strategic matters (Internet Three, 2008: www.nestle.com).

South African organisations have various forms of the HRIS, and may use independent systems for the management of training, recruitment or performance management. The aim is to allow organisations to expertly attract, recruit, motivate, develop and retain staff by using the HRIS to build a career platform. Some South African companies use the corporate intranet and the HRIS to build skills libraries aligned to professional competencies (Schweyer, 2004). It allows data collection, transaction processing, and information analysis of large quantities. In addition, Schweyer (2004) provides a holistic need for HRIS by referring to outsourcing and globalisation as

radically changing the business models in most large organisations which, in turn, has created an urgent need for a global and South African view of the talent flow.
The lack of development of HRISs in South Africa could also be attributed to reasons below.

3.9 Reasons for failures in HRISs

Literature reviews have highlighted a few reasons for the failure of the HRIS in the organisation:

- **Lack of knowledge and resources**

There could be a lack of general knowledge regarding HRIS which may prohibit KM being championed. Ngai and Wat (2005) report that a large number of organisations experience technology-implementation problems, including the HRIS, as a result of insufficient capital and skills, which results in their reluctance to apply HRIS application unless they believe that benefits are created for their organisations. Senior management has to understand that the return on investments will follow within a reasonable length of time.

- **Budgeting constraints**

Beckers and Bsat (2002) acknowledge that the costs associated with implementing and maintaining a HRIS can be extreme. Kovach and Cathcart (1999) point out that insufficient money and lack of support from senior management restricts the full potential of the HRIS.

- **Time restraints**

The amount of time needed for the implementation of the system can be quite overwhelming if the turnaround time is unrealistic. With any system, the last stages usually result in additional costs and demands that were not necessarily budgeted for and places increasing demands on the organisation.

A survey conducted by the Institute of Management and Administration (2002), cited in Ngai and Wat (2006), concluded that the leading challenges to implementing a HRIS include:

- lack of staff;
- lack of a budget;

- unfamiliarity with technology;
- satisfaction with the status quo;
- need to work with other departments;
- failure to include key stakeholders;
- failure to keep project team involved;
- political hidden agenda; and
- lack of information technology (IT) support.

The HRIS data and information must be also be timeously updated and secured to prevent unreliable and untrustworthy information.

3.10 Data security and integrity

Although the HRIS can align organisational goals that allow full access to the relevant data, difficulty strikes through intentional or unintentional sabotages on the HR information and systems. The organisation is then left to pick up the pieces and recover lost information (Anonymous, 2006).

3.10.1 The importance of privacy and security

Data-base privacy refers to data in a HRIS which could be private or owned by individual employees (Daniels, 2006).

"Data-base security is the protection of HR data and systems as propriety, company-owned investments that should be protected from theft or damage" (Anonymous, 2006).
It is the owner"s responsibility to ensure that the data is protected from harmful and negligent dissemination and usage. The high-powered computer systems have lengthened the amount and type of information stored in an HRIS. The functionality can, however, be costly as it influences data proliferation as central privacy and security issue surface (Internet One, 2008: www. communication.howstuffworks.com).

The HRIS database security operates as corporate assets, and usually has two themes (Runny, 2006):

- ***"The protection of the HRIS from unauthorised use, deliberate or accidental data dissemination within or outside the company, and invasions by hackers, thieves or others.***

- ***The protection of data quality, or the integrity of the HRIS data base, to prevent errors, inconsistencies, bad data or procedures that damage data integrity".***

Runny (2006) argues that HR systems were designed to be exploited as they were configured as an access system. According to Internet One (2008: www.communication.howstuffworks.com), microcomputers, networking technology and on-line access have enabled the technological ability to allow unrestricted access to HRIS data. This access, however, has the ability to become a privacy concern as more people, who access private records simultaneously, increase the opportunities for privacy abuse and the activities of criminals and threats (Trim, 2005).

Passwords and firewalls assist to steer viruses and intruders away from entering the corporate systems. Mathis and Jackson (2004) recommend the installation of a database management system (DBMS) which specifies various access privileges. Employees are then granted no access privileges, read-only privileges (data that can be read but not changed), limited access privileges (only certain data can be read and/or changed), or full-update privileges (all data can be read and changed) (Mathis and Jackson, 2004).

The HRIS cannot be viewed in isolation as it supports one of the formulated Acts in South Africa, the **Promotion of Access to Information Act 2000.**

3.10.2 Promotion of Access to Information Act (PAIA) 2000 in South Africa

Aligned to the one of the objectives of the HRIS, the Act ***"fosters a culture of transparency and accountability in public and private bodies by giving effect to the right of access to information; and actively promotes a society in which the people of South Africa have effective access to information to enable them to more fully exercise and protect all of their rights"*** (Internet Four, 2010: www.acts.co.za).

In terms of Section 32 of the Bill of Rights in the Constitution, 1996, every person has a right to access to information. The right reads as follows (Wessels, 2000):

"1) Everyone has a right of access to

- ***a) Any information held by the state; and***
- ***b) Any information held by another person and that is required for the exercise or protection of any rights.***

2) National legislation must be enacted to give effect to this right, any may provide for reasonable measures to alleviate the administrative and financial burden of the state.

The motivation for giving effect to the right to access to information is to foster a culture of transparency and accountability in public and private organisations and to promote a society in which everyone has effective access to information to enable to fully exercise and protect their rights. The Act has established mechanisms and procedures to access information swiftly, inexpensively, and effortlessly as reasonably possible.

The Act also makes it imperative that all organisations have a good records classification system that should identify, arrange, store and retrieve information. A proper records system will ensure easier compliance with the Promotion of Access to Information Act.

The starting point should be the fact that a requester of information has the right to access information, the right to access any record, and the extent to which the request could be accommodated rather than looking for reasons as to why such request should be declined".

All organisations however large or small have to retain certain records/information. It may be left to the discretion of the organisation to then decide what information will be made available to the employee, and what will be withheld. The information made available can include grades of jobs, medical aid information, HR policies and procedures, work conditions and leave records. The purpose of providing such information is to make informed decisions instead of „guesswork", to more accurately assess levels of performance and productivity and monitor HR activities (absence, accident, sickness, discipline). Information that is restricted to the employer"s access may include physical and health status, personal appraisals or individual salary.

3.11 Conclusion

Chapter Three focused on HRISs and discussed HR as a strategic business partner with different facets of HRs that leverage HRIS usage.

The dependency and interrelatedness between HR modules and HRISs were discussed as well as the ability of the HRIS to commit to the business needs and deliver on capability. The tools, components and benefits associated with the HRIS as well as designs, types and modules of the HRIS were discussed. Chapter Three concluded with the explanation of HRIS development in South Africa and possible reasons for failure and data security issues. The Promotion of Access to Information Act 2000 was also discussed.

The next chapter deals with the theoretical background of KM in South Africa and abroad. It also refers to the principles underpinning KM and KM interventions with its associated challenges to create knowledge creation and sharing.

CHAPTER FOUR
KNOWLEDGE MANAGEMENT

4.1 Introduction

The popularity of knowledge and KM has evolved and translated to a central theme for strategic management and as a strategic management tool. This popularity may be attributed to the rising number of articles, papers and books presented around this topic. In 1995, there were 45 articles about KM in the ABI Information data base, 158 in 1998, and, in 2002, the number had escalated to 835.

In organisations like construction companies, knowledge is divided into the following three categories (Conroy and Solton, 1998 cited in Egbu, 2004):

- ***"Technical – relating to techniques, technologies, work processes, statutory requirements and costs involved in the production of discipline-specific elements of the project.***
- ***Project Management – relating to the techniques and technologies for managing execution of projects.***
- ***Project-related knowledge of the client and the historical aspects of the project - which can be of use for future marketing purposes".***

Gold, Malhotra and Segars (2001) explain that KM encourages an organisation to generate creativity, collaboration, increased work contribution, market new products, is more responsive to change management interventions and decrease the duplication of information or knowledge.

4.2 Information and knowledge

The differentiation between information and knowledge is provided by Abdullah, Selamat, Sahibudin and Alias (2005) in Table 4.1.

Table 4.1: The difference between information and knowledge

Information	Knowledge
Processed data	Actionable information
Provides facts	Allows predictions, casual associations, or predictive decisions
Clear, crisp, structured and simplistic	Muddy, fuzzy, partly unstructured
Easily expressed in written form	Intuitive, hard to communicate, and difficult to express in words and illustration
Obtained by condensing, correcting, contextualising, and calculating data	Lies in connections, conversations between people, experienced-based intuition, and people‟s ability to compare situations, problems and solutions
Devoid of owner dependencies	Depends on the owner

Source: Abdullah, R., Selamat, M.H., Sahibudin, S., and Alias , R.A. (2005). A Framework for Knowledge Management System Implementation in Collaborative Environment for Higher Learning Institution. ***Journal of Knowledge Management Practice*****. p. 41.**

An organisation may be unaware of the context of the knowledge. Hence, it is important to realise that information transfers to knowledge only upon understanding.

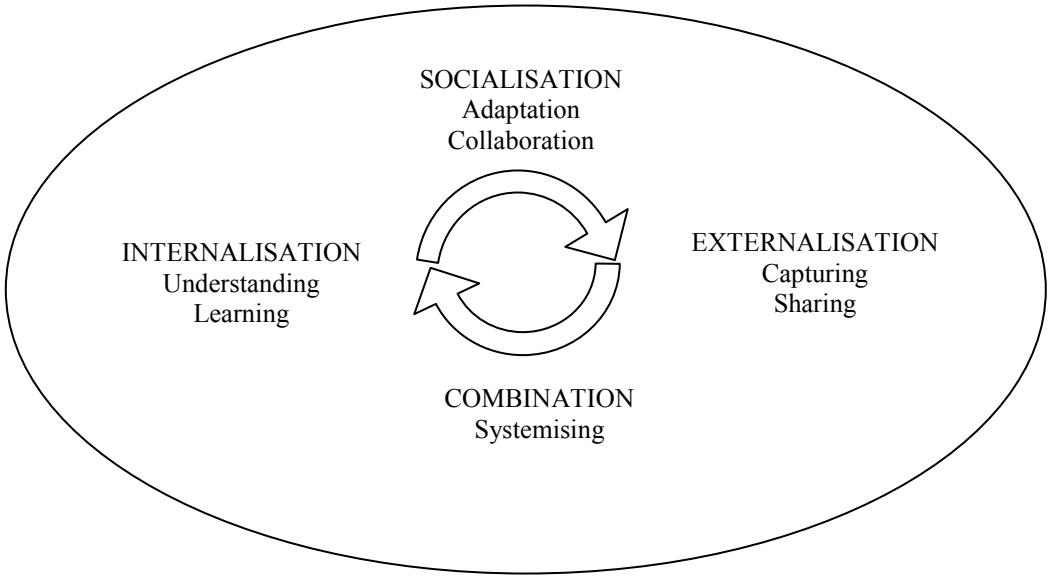
Price (2004) explains that an HR manager may not realise the effect of their actions on knowledge losses in the organisation. A manager who fires an employee due to downsizing or a careless mistake means that employee‟s individual knowledge will leave the organisation. In addition, employees who were accustomed to "leaving their brains at the gate" cannot be expected to use the employee knowledge with ease. Change management interventions are recommended to assist these employees to get accustomed to a knowledge sharing environment. Such interventions must clearly indicate the process of converting and generating knowledge within the organisation.

4.3 Tacit and Explicit knowledge conversion: Knowledge Creation

Nonaka and Takeuchi (1995), cited in Shimemua and Nakamori (2003), confirm that conversion from tacit to explicit knowledge and vice versa is critical for knowledge creation. This process requires both types of knowledge to support one another through constant interaction.

The approach adopted by Nonaka and Takeuchi (2003) assumes that knowledge is shaped through the communication between tacit and explicit knowledge, and suggests four forms of knowledge creation, as explained in Figure 4.1.

Figure 4.1: The knowledge conversion process



Source: Nonaka, I. and Takeuchi, A. (1995). *The Knowledge Creating Company*. New York: Oxford. University Press.

- **Socialisation** is a process of sharing experiences, whether around a table or coffee machine, which involuntarily produces tacit knowledge such as past experiences, ideas and technological skills. The advantages include its personal ability, convenience and the ability to adapt to suit the circumstances of both communicators and the understanding of those listening through opportunities to repeat and reassure conversations.

Jain (2006:54) proposes that IT is the cheapest, most convenient mode of knowledge sharing. Exchanging knowledge, through face-to-face contact using tools such as teleconferencing technologies and desktop video-conferencing, is useful for socialisation.

- **Externalisation** is a formal process of expressing tacit knowledge into sophisticated explicit concepts, including sentencing, metaphors, analogies, concepts, or models accessible to a broader audience. Jain (2006) provides an example of electronic mail (e-mail) used to formally express information.

- **Combination** is a practice of collaborating ideas into a knowledge market system. This form of knowledge conversion requires the collaboration of different models of explicit knowledge.

  Jain (2006) explains that organisations have invested in web-based applications to enable the sharing of knowledge**.**

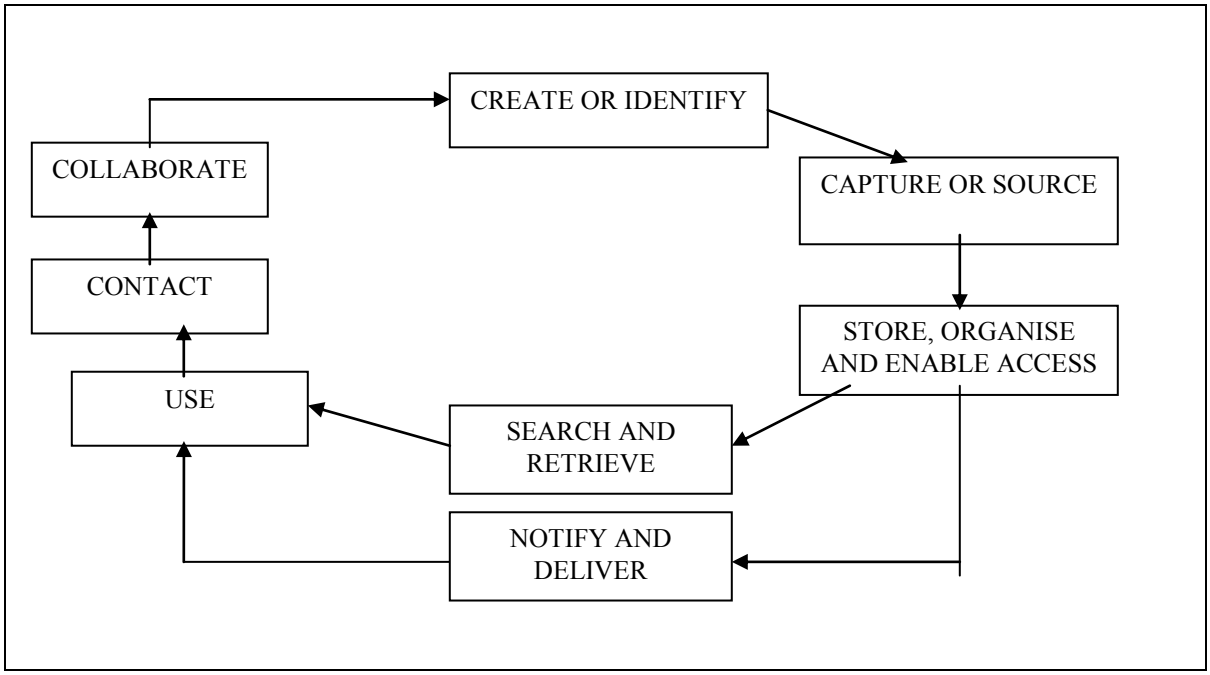
- **Internalisation** is a method of personifying explicit knowledge into tacit knowledge. It is similar to learning by doing. Jain (2006) explains that it relies on an individual‟s capability, experience and skills to understand explicit information.

Organisations should ensure the collection of the required knowledge with good intention and then implement solutions that help to capture and store knowledge for sharing. To best demonstrate this point and to ensure that knowledge is mobilised, it is fundamental to understand the knowledge cycle.

4.4 The knowledge cycle

Figure 4.2 demonstrates key elements of the knowledge cycle as one moves clockwise at “USE” and moves through the different stages. The knowledge cycle describes the organisational process where knowledge is needed, created or shared, transferred and then utilised for practical application. The conversion of knowledge, as explained by Nonaka and Takeuchi (1995), describes the flow of knowledge from identification to capturing, sharing and to utilisation.

Figure 4.2: The knowledge cycle



Source: Nonaka, I. and Takeuchi, A. (1995). *The Knowledge-Creating Company*. New York: Oxford University Press.

Mohamed, Stankosky and Murray (2006) add that that any knowledge cycle should be built within a human and system framework. This could be attributed to knowledge as human driven and depends a great deal on relationships, communication and interaction. Pillania (2009) adds that the human mind acts as vehicles for the knowledge creation, sharing and implementation and people are exceptionally significant for the knowledge creation process.

Soliman and Spooner (2003) suggest that IT is a critical enabler for KM, while other researchers suggest that KM focuses around people and not technology.

McDermott (1999) add that the knowledge revolution has encouraged innovative technology systems to share knowledge.

4.5 Knowledge sharing

Kruger and Snyman (2004) explain that, in order for knowledge to be adequately shared, organisations must manage knowledge as a strategic resource through **technology** and **culture** as enablers to KM.

4.5.1 Technology and knowledge sharing

Martinsons (1995) predicts HR professionals to accelerate their use of information technology to aid the enhancement of HRM. HR scholars in the United Kingdom and America have placed pressure on HR practitioners to create and innovate in information technology usage (Ball, 2001). Smith (2000) agreed that the way one competes is through the effective and efficient use of technology to enable knowledge activities.

Alavi and Leidner (2001) refer to information-based systems that sustain and improve organisational procedures of knowledge creation, storage, transfer and application. An IT system should be intended to support and enhance organisational KM while simultaneously complementing and encouraging the KM actions of individuals (Alavi and Leidner, 2001).

Literature positions information technology as a natural solution for KM. Advances in technology today have made it easier to access, store or disseminate knowledge more willingly. Many organisations are employing information technology to facilitate the integration and sharing of knowledge by employees (Basiulis, 2009).

Hahn and Subramani (2000) concur that information technology has accelerated the growth of sustainability of functions such as KM. Walsham (2001) agrees that the benefits of information technology to provide quicker access to less expensive and broader platforms of information and communication encourage the sharing of knowledge.

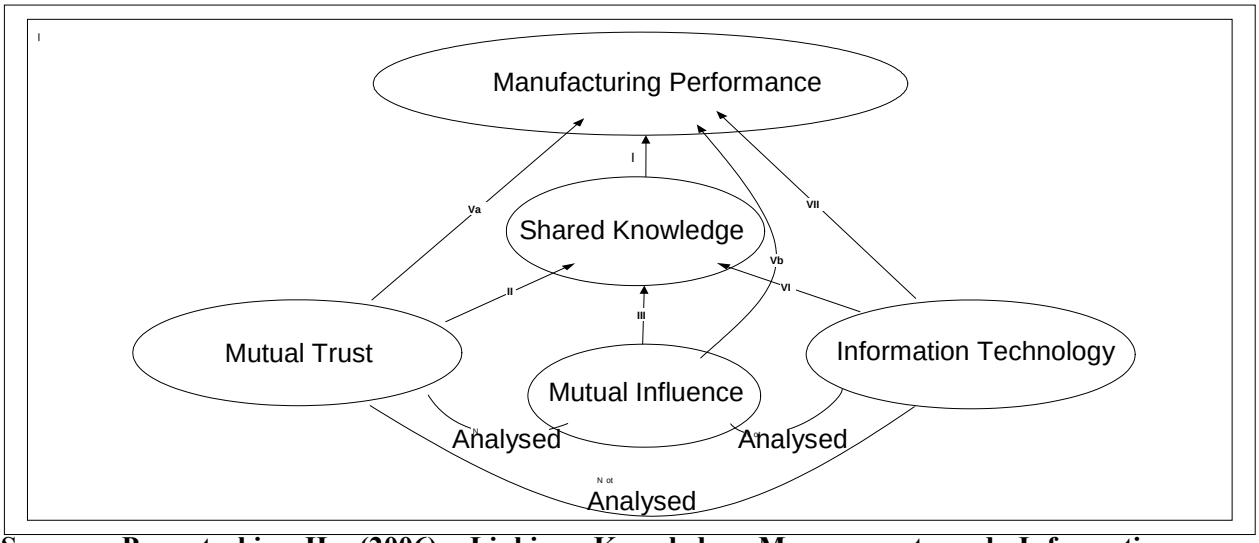
Benbya (2006) explains that the trend aligned to knowledge sharing focuses on effective knowledge-sharing technologies. Junnarkar and Brown (1997), cited in Jain (2006:55), suggest four action steps to ensure that IT is a key enabler in KM:

- "develop organisational IT standards for an IT infrastructure to link people to people and people to information;
- relate IT investments in the organisation"s overall knowledge management strategy;
- proactively implement IT tools to access explicit knowledge; and
- establish KM partnerships that collaborate information systems and HR".

Arora (2002:240) comments that technology can be used to contest corporate amnesia, simultaneously facilitating knowledge creation, capture and sharing the knowledge from the right people to the right people.

Figure 4.3 describes technology as an enabler and facilitator towards shared knowledge, its apparatus, technology and manufacturing performance (Papoutsakis, 2006).

Figure 4.3: The Shared Knowledge and Information Technology-Evaluation Model



Source: Papoutsakis, H. (2006). Linking Knowledge Management and Information Technology to Business Performance. ***Journal of Knowledge Management Practice*****. 7. (1).**

The proposed model illustrates the relationships among the five variables: (Papoutsakis, 2006:10):

- ***"The major components of shared knowledge are mutual trust and mutual influence;***
- ***There is a positive relationship between shared knowledge and manufacturing performance (i.e. increasing levels of shared knowledge among manufacturing, quality and research and development groups, leads to increased manufacturing group performance);***
- ***Shared knowledge mediates the relationship between manufacturing performance and mutual influence, while mutual trust affects manufacturing performance mainly through shared knowledge but also in a direct way;***

- ***Information technology significantly affects manufacturing performance, and has a less significant effect on shared knowledge, as it mainly influences explicit to explicit knowledge transactions".***

While Kalkan (2008) suggests that the accelerated use of IT will not necessarily make KM initiatives work, Butler, Heavin, and O'Donovan (2007) posit that IT improves organisational efficiencies by sharing information on processes or projects. Consistent with this view, Chua (2007) explains that IT that is integrated in knowledge enables organisational success.

Papoutsakis (2006) recommends that senior management drive IT by combining its capabilities with the strategic objectives of the organisation.

Pillania (2009) further acknowledges IT and systems as information and knowledge sharing mechanisms that simplifies the process to share across geographical distances. As a result of transferring data to information and information to knowledge, ICT systems are used to provide information which makes KM possible.

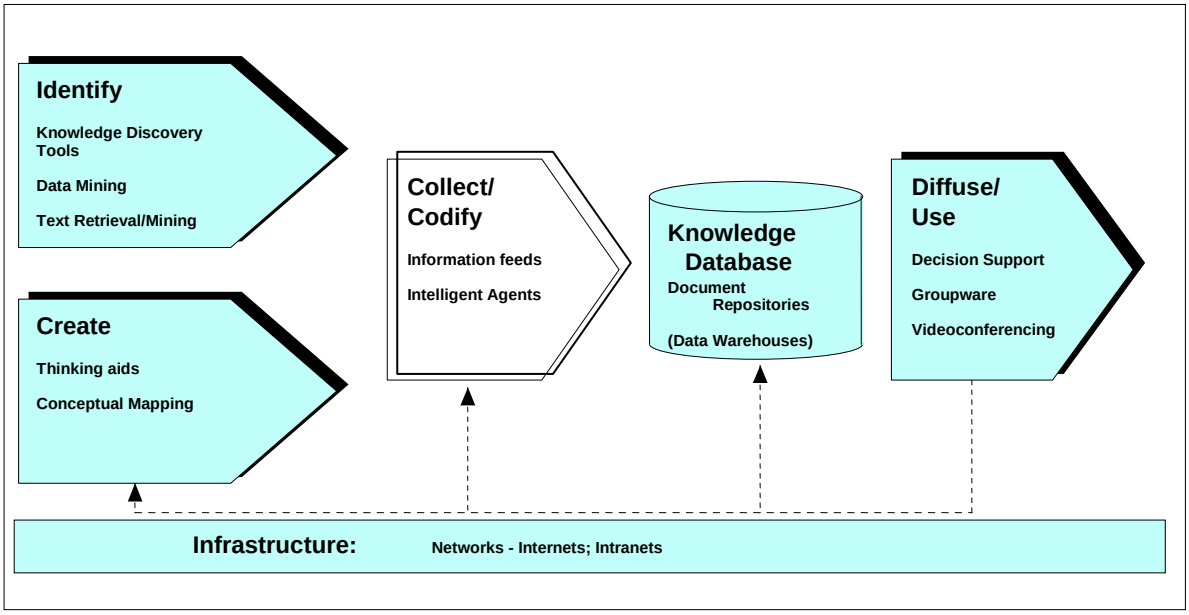
4.5.1.1 Information, communication and technology (ICT) systems

Willmott (1994) explains ICTs **"as a means of radically „re-engineering" organisations to achieve market responsiveness whilst substantially reducing labour costs".**

The information infrastructure represented by Skyrme (2000), in Figure 4.4, explains the design that information technology assumes in a specific organisation to achieve selected goals and functions.

Skyrme (2000) refers to ICT as a representation of knowledge processes that mirror a value chain where KM is characterised by: a) identifying existing knowledge; and b) creating new knowledge.

Figure 4.4: Knowledge management infrastructure: representative information systems solutions mapped against knowledge processes



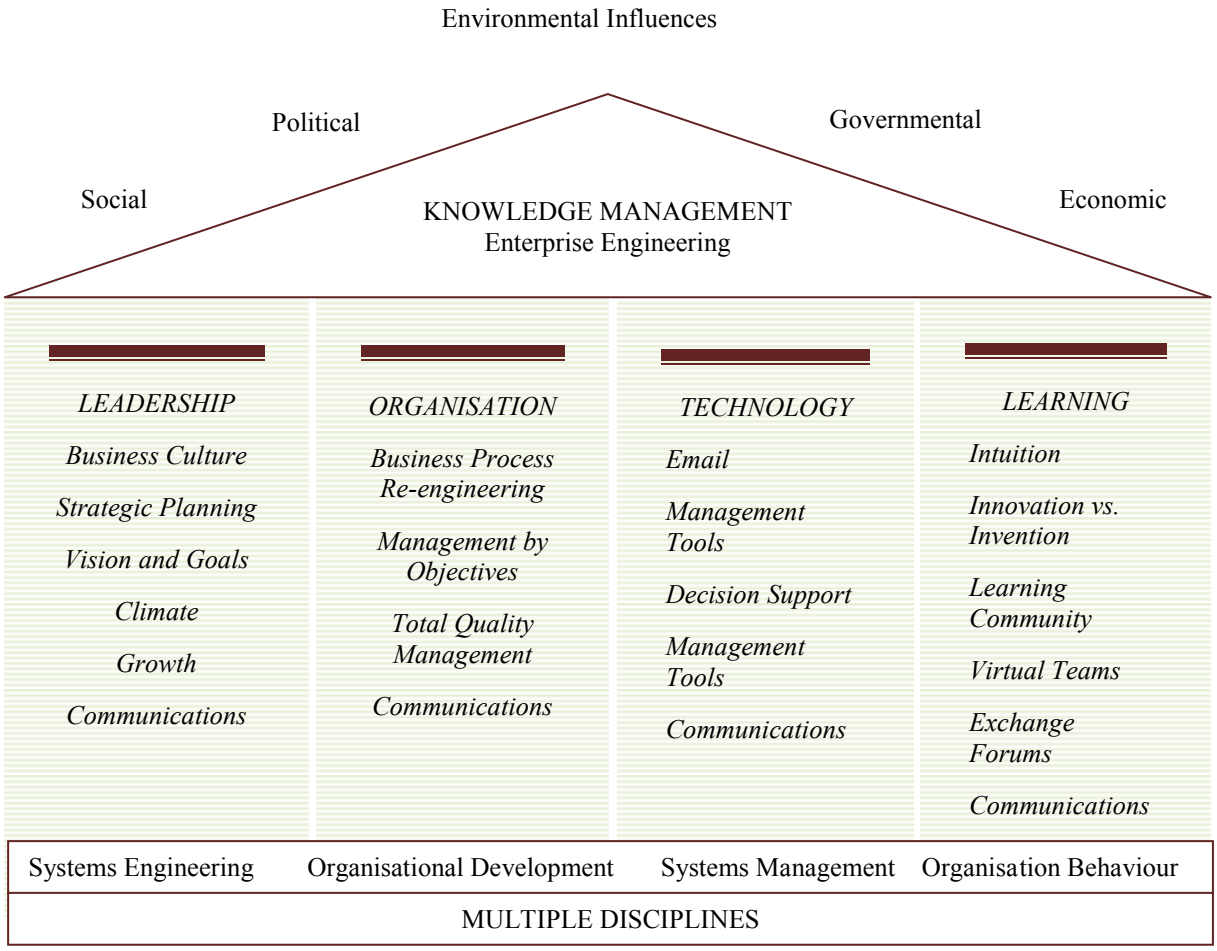
Source: Skyrme, D. J. (2000). ***Knowledge Management Solutions – The IT Contribution*****. Available from www.citeseerx.ist.psu.edu/viewdoc**

Figure 4.4 highlights the need for managers to know how to arrange and coordinate the various ICT and business system applications required to satisfy the information needs of each level of the organisation, and the needs of the organisation as a whole (Skyrme, 2000).

Mcdermott and O'Dell (2001) and Hibbard and Carillo (1998) agree that KM initiatives are not reliant on IT tools for success and should only be adopted when necessary, although other authors argue that IT is critical for global reach when organisations are geographically distributed (Duffy, 2000 and Lang, 2001).

The KM conceptual framework, developed by Stankosky and Baldanza (2000), has measured ICT necessary as any of the other three pillars of KM (Figure 4.5), that is, organisation, learning and leadership. According to the authors, these four pillars outline the foundation of any KM system.

Figure 4.5: Four pillars of knowledge management



Source: Stankosky, M.A. and Baldanza, C. (2000), *Knowledge Management: An Evolutionary Architecture toward Enterprise Engineering, International Council on Systems Engineering (INCOSE)*. Reston: VA.

If an organisation places extensive focus on technology without full cognisance of the surrounding social, political, environmental, governmental and economic influences, the system may fail. In contrast, excess emphasis on the strategy and organisation may lose the opportunity to capitalise on technology to execute strategy or create a learning culture (Mohamed, Stankosky and Murray, 2006).

Of the four KM pillars, Mohamed, Stankosky and Murray (2006) conclude that the implications of IT produce value-added benefits. Hence, there are opportunities for KM practices that are supported by IT to assist managers to promote sharing of knowledge and intellectual capital (Kankanhalli, Tanudidjaja, Sutanto and Tan, 2003).

Rutherford (2001) advised that an organisation cannot simply invest in a new technology without ensuring its effective socialisation, acceptance and utisilisation within the workplace. Information, Communication and Technology (ICT) cannot be the only tool that facilitates knowledge sharing and management. Jain (2006) recommends that organisations do not ignore the human aspect as it is within the human that knowledge arises and resides, and technology simply facilitates the categorising of the knowledge before its transfer.

Papoutsakis (2006) confirms that the use of technologies for managing or sharing organisational information and knowledge enhances business performance. This, however, is largely reliant on the „knowledge-sharing" ability of culture of the organisation.

4.5.2 Culture and knowledge sharing

Debrowski (2004) explains that open and accountable decision-making, collaborative problem solving and planning and wide sharing and accessibility of information contribute to the underlying culture. Openness breeds collaboration as it increases the level and willingness to share. The knowledge-sharing culture may also be built through interaction with colleagues. Individuals are strongly influenced by people with whom they regularly interact. Research refers to HR as a key role player to nurture and strengthen KM with the aid of learning interventions and culture change initiatives (Murty, 2002).

Basiulis (2009) encourages the transfer of tacit knowledge by cultivating an environment of open communication where employees are encouraged to speak freely without fear of victimisation or retribution. This type of culture may appear time consuming to develop but employees, who feel protected and secure, are generally more obliging to trade ideas that support innovate and creative solutions.

The relevance of organisational culture for KM is outlined by McKenzie, et al., (2001), who explains that employees are more acceptances of KM practices when the organisational culture allows employees to participate more freely in KM. A successful KM strategy can aid this transfer and influence a culture of knowledge sharing.

An organisation should be focused on encouraging and facilitating a knowledge culture with the aid of learning interventions, education and management leading by example. When employees

emulate the required knowledge or information timeously, relationships with all stakeholders generally improve.

Gold, Malhotra, and Segars (2001) maintain that non-hierarchical organisations are the most effective for knowledge sharing cultures. Dufour and Peter (2007) add that the corporate culture can influence either the achievement or breakdown of the KM implementation. KM requires a culture change where the organisations reward sharing, not hoarding. Emery (1999) advises that if this is neglected, the organisational culture moves to an invisible barrier that hinders change.

Moffett, et al., (2003), comments that there may be instances where the organisational culture does not allow KM interventions.

Organisations with a diverse, multicultural workforce may refer to workshops or classroom training to develop KM skills among people from different backgrounds. These learning interventions are likely to stimulate creative problem-solving techniques or alternate options for solutions. Ultimately, the emphasis would be shifted to building mechanisms of knowledge sharing.

Elmuti (2001) suggests that a diverse workforce encourages managers to promote an environment that is culturally aware and responsive to the cultural needs of their staff and customers. Such opportunities allow the employees to reach high-performing levels to adequately impact on the business (Watard and Perez-Alvarez, 2007).

Ford and Chan (2003) explain that the knowledge-sharing process disseminates knowledge within the organisation which makes it vulnerable to the consequences of cultural differences. Knowledge sharing with the heterogeneous groups can pose difficulty as it requires greater investment in time and effort compared to cultural groups emulating homogeneity (Ford and Chan, 2003). Hence, knowledge sharing should be promoted within formal structures that employ formal reward systems and incentives. Moreover, the culture of a HR department should allow, encourage and provide opportunity for ideas, knowledge and experiences to be continuously communicated within the organisation.

4.6 Knowledge assets

Freeze and Kulkani (2007) confirm that individual sources of knowledge are identified and characterised as knowledge assets. By explicating these knowledge assets, KM interventions can more effectively enable knowledge sharing and performance. Successful performance of an organisation relies on its capabilities to service and convey customer expectations, yet Afiouni (2007) comments that insufficient attention is given to human capital and its role in gaining a competitive gain in business. The retail organisation‟s ability to service and convey a better-quality rate to customers relies on the combined attempts of its decidedly motivated, capable, competent and knowledgeable people. Such people comprise the organisation‟s appreciated „human capital‟ or knowledge assets (Rastogi, 2003).

4.6.1 Intellectual capital

Intellectual capital is often referred to as the knowledge asset of an organisation. Knowledge assets help achieve business goals and are a set of intangible assets that includes the internal knowledge that employees have of information processes, external and internal experts, products, customers and competitors. It could include the commercial value of trademarks, licenses, brand names, formulations, and patents. Rodgers (2003) agrees that the technological change and liberalisation of markets have created the need for managers to have a sense of value of their intangible assets.

4.6.2 Intangible assets

Skyrme (2000) contends that the value of an organisation‟s wealth is its intangible assets which can contribute to a first-class share in the market. The rediscovery of people, as the central importance of knowledge, has become vital to the organisation largely due to a marked increase in corporate downsizing, outsourcing and employee redundancies. Organisations should be aware that it is the people capacity of an organisation that drives the development and sustainability of other intellectual assets.

Research indicates that multinational companies, like Microsoft, are progressively more valued for their intellectual capital (Debowski, 2006). Microsoft‟s market capitalisation was estimated $284 billion as of July 2003, a figure including structural capital and human capital consisting of

knowledge that exists in the minds of software developers, researchers, academic collaborators, and business managers (Debowski, 2006).

In the retail industry, businesses operate in multifaceted and vibrant environments and the ability to obtain and absorb innovative market and technical capabilities efficiently is required to achieve human capital advantage over competitors.

4.6.3 Human capital

Human capital forms the core of a knowledge-based organisation and Barney (1991) agrees that an organisation‟s human capital is a crucial foundation of advantage. It can be referred to as the skills which an employee acquires on the job, through training and experience, and which increase that employee's value in the marketplace.

Human capital is a source of creativity and social influence which stimulates the primary component of the intellectual capital construct.

Meso and Smith (2000) confirm that the greater the human capacity in an organisation, the greater the probability to compete and excel over other organisations. Nonaka and Peltokorpi (2006) agree that the twenty-first century company can only succeed when its leaders can develop human and intellectual capital by driving knowledge creation and knowledge-sharing principles.

4.7 Driving and maintaining knowledge management

KM cannot exist without the appropriate support structures and mechanisms to steer and sustain its impact. The importance of employee buy-in and effective communication was identified by Bishop, et al., (2008) as an imperative input to ensuring the success of the KM component. Several interviewees highlighted the importance of senior management communication and the demonstration of their involvement and associated benefits of the KM intervention to the organisation. KM has to be „sold‟ to the employees and they need to know how they can reap the benefits and utilise HRIS knowledge base once there is management buy-in.

4.7.1 Management buy-in

It is pointless implementing a successful KM system in an organisation without a KM champion leading the project with management buy-in. IRS Management Review (2000) highlights two significant features that describe the benefits of KM:

- employees recognise that new tools and processes can simplify their work; and
- employees are afforded time and space for knowledge formation and distribution.

Smith and McLaughlin (2004), cited in Bishop, et al., (2008) suggest that an organisation invest in three themes to attain successful buy-in:

- employees necessitate critical contributions to the expansion of the KM vision;
- employees should be motivated to use their abilities; and
- managers must use the opportunity of facilitating face-to-face meetings.

A lack of leadership can prevent an organisation from implementing the basics of KM. Such organisations are unable to capitalise on the organisational value of a KM system to secure funding for their KM initiatives (Probst, Raub, and Romhardt, 2002).

4.7.2 Structural support and design

Debrowski (2004) explains structural support that includes technological systems, HR processes and other forms of work-related infrastructure, which may operate as barriers to knowledge cultures. A knowledge-intensive organisation cannot succeed without leveraging the power of organisational design for effective KM.

Myers (1996) explains organisational design as creating the platform for people to combine, co-ordinate, and control resources and activities in order to produce value to support the business‟s competitive stance. Myers (1996) predicts that the increased value of organisational design for improved performance will change the current platform from a technological (“we need better databases!”) or a personnel-related solution (Hire smarter people!”), rather than a systematic one, to address performance issues.

Kalkan (2008) agrees that hierarchical-bureaucratic structures can inhibit knowledge sharing and utilisation as they inhibit learning, generation and sharing of knowledge. The solution to create a culture of knowledge innovation would include multidisciplinary groups and high degrees of autonomy.

Malhotra and Galletta (2003) add that certain organisational structures and processes should foster commitment and not limit communication by creating intentional or unintentional obstacles. The communication flow can be severely restricted if the department structure reflects a bureaucratic hierarchy, making it difficult to share knowledge within and across departments (horizontally and vertically).

4.7.3 Rewards

Carillo (2004), cited in Bishop, et al., (2008), explains that the relevance of people-related practices, to support successful KM explanations related to rewards and support for KM, has received a lack of coverage in the literature.

With the implementation of a recognition and reward programme, active participants are continuously acknowledged to ensure support of employee performance management systems and greater KM ownership, (Robinson, et al., 2005).

Jennex and Olfman (2004) highlight the need for inspired users who are dedicated to creating and sharing knowledge that is aided with the supply of incentives. According to Wong (2005), the correct incentives, rewards and motivations persuade employees to contribute to and apply knowledge. IRS Management Review (2000) provides suggestions for employees to contribute to knowledge, acknowledging that it can be the most complicated facet of KM to accomplish. In order to increase interest for KM, employees generally need to perceive that their knowledge assistance have been recognised and financially (or non-financially) rewarded. However, some authors have recommended, in opposition to monetary rewards, intangible rewards instead, such as colleague acknowledgment, knowledge opportunities and superior autonomy.

Malhotra and Galletta (2003) mention that the presence of official incentives in organisations does not necessarily inspire knowledge sharing.

The existence of rewards ands similar tools to drive knowledge management is relatively different in South African organisations.

4.8 Knowledge management in the South African organisation

In the South African retail context, limited organisations have invested in human capital to promote conversion of tacit to explicit knowledge. Although the significance of this need has been extensively expressed, people viewpoints have yet to attain its desired attention. The KM literature has made incomplete and restricted reference to KM concepts and frameworks (Afiouni, 2007).

One recommended strategy is to encourage reproduction of tacit knowledge within the retail organisation without allowing it to replicate outside. From this view, organisations should (Price, 2004):

- recognise that knowledge is an integral component to business products and services as a competitive advantage;
- differentiate between explicit and tacit knowledge;
- acknowledge that tacit knowledge resides within people and is learned in a vague and unofficial way; and
- discover and draw the tacit knowledge to integrate it within the „structural capital" of the organisation for easy access to the others.

KM, in South African organisations, should play a pivotal role as accelerators of efficiency and effectiveness when conducting KM practices.

Gallagher and Haslett (2004) criticise current KM maturity models as they focus a large amount of effort on the technological concerns and ignore the practical components of KM. With the background of KM in place, South African organisations are yet to benefit from the effectiveness and efficiency of such tools that encourage the knowledge cycle.

The speed of change in the South African knowledge era requires greater emphasis on the systematic renewal of the tacit knowledge and updating of tacit knowledge for the sustainability of the firm and the realisation that people know things, and that this knowledge provides organisations with a competitive advantage. The difficulty of translating this knowledge into a tangible product

or process raises three issues for organisations: how to identify who holds such knowledge, how to share the knowledge and how to enable others to access it when they need it (Afiouni, 2007).

4.9 Challenges of knowledge management

The challenges associated with KM are industry wide and relate to all aspects of the individual, team, department and organisation. There has been a slow introduction of KM within HRISs in South African organisations; a key reason lies with the poor support from senior management support. This is contradictory to requirements that have been detailed by Bishop, et al., (2008), who highlighted the necessity for senior support with many participants suggesting that the lack of such support cannot succeed a KM initiative.

The explanations below explore the different challenges associated with KM.

4.9.1 Management support

Previously, managers were not equipped to use computers and were not knowledgeable about the systems. Managers often feel „why fix it if it is not broken" and are reluctant to alter existing practices through change as they are comfortable in their ways.

Coates (2001) agrees that successful KM relies on competent management to give confidence to and facilitate successful communication among teams.

Dufour and Steane (2007) add that often managers disengage from the KM initiative if it takes too long. Instead they should consider that it will take time to be fully implemented as it can involve disruptive technology.

4.9.2 Information overload

As system capabilities increase with robustness, a large number of people become overloaded with information which they refer to as their „exhaustive capacity". They believe that their brains cannot grasp any more information. Excessive information may shroud the knowledge potentially gained, assimilated and used. This could then stifle an environment yearning for organisational learning, innovation and creativity. Therefore, identifying options to view information meaningfully (for

example, by reducing unneeded content) can increase productivity and innovation. Unfortunately, the identification of such options can become a considerable challenge for KM practitioners (Dufour and Steane, 2007). Kalkan (2008) agrees that the knowledge culture must be balanced to inhibit information overload which is detrimental for the KM processes.

4.9.3 Privacy and confidentiality

Some of an organisation‟s knowledge assets should remain private, and protected from large-scale access. There should be principles for deciding which kinds of knowledge should be distributed and accessible and which should not. Attention must then be drawn to the difference between effective distribution of knowledge and aimless spreading of any and every piece of information to all employees (Storey, 2001).

The need to protect certain areas of knowledge limits the knowledge distribution. There may be a duty of secrecy, that is, part of legal obligations to customers or contractual partners. Certain core intellectual assets may be essential to the company‟s competitive position, and must be protected from replication by rival companies.

Gray and Durcikova (2006) add that another common limitation on the effectiveness of such a system is that potential users may not readily access knowledge from such a system due to uncertainty surrounding the integrity of the data.

4.9.4 Fostering Collaboration

People generate knowledge and it is due to their communications with others that their colleagues benefit from knowledge and key learnings. Organisations should regularly identify alternative options to inspire and support a collaborative culture. Key stakeholders in an organisation may be able to identify those „*natural collaborators'* (Anonymous, 2006).

To build a collaborative environment or the „learning organisation‟, the organisations require helpful attitudes within the employee base. Confidence and trust are critical to promote a knowledge-sharing culture (Kalkan, 2008)

The challenge of encouraging workers to share knowledge can be further exacerbated by those who prefer to „hoard‟ this intellectual asset. With the common belief that „knowledge is power‟,

employees may use what they know to manipulate circumstances to their own betterment. To provide free information about strategic information may seem like professional suicide.
Van Winkelen and McDermot (2008) agree that employees may not be forthcoming to share information with colleagues, as they may believe that their knowledge allows them advantage in negotiations.

4.9.5 Documenting critical processes

Critical processes are challenging to document due to their need for cost-effective and safe requirements.

Malhotra (2004) recommends that the organisation‟s key stakeholders document the precise knowledge about a certain process to ensure it is a true reflection and is transferred appropriately. This will ensure an easier access point for employees who want to contribute to the knowledge-sharing process by participating in these critical processes.

4.9.6 Maintaining "Status Quo"

The satisfaction with "status quo" inhibits strong resistance due to the demanding nature of work involved in the development of a KM intervention and the lack of employees to assist with administration (Grobler, et al., 2006). Where there is evidence of change, employees are likely to resist the change. The key to overcoming the struggle is communication. The answer also lies in allowing employees to benefit from managing their own information, accessing it directly and updating it whenever the need arises (Gasco, Llopis, and Gonzales, 2004).

However, the task mentioned is a substantial challenge, with full cognisance of the control and attachment held to individual knowledge, experience and expertise. Instead, platforms of information exchange must be enabled to encourage sharing and communication patterns. The department structure can also influence the ability of the organisation to acquire and share information. For example, the organisational strategy should focus on the retention of expertise which originates from formal education, experience and collaboration (Freeze and Kulkarni, 2007).

Orzano, et al., (2007), mentions that **"opportunities for informal interaction are especially important because the knowledge exchanged during these conversations helps employees connect with the organisation as employees ask questions and share ideas".**

In order to support the need to maintain the status quo, employees must be committed to the environment.

4.9.7 Encouraging and cultivating commitment

McKenzie, Truch and Winkelen (2001) identified the conditions required for gathering commitment to KM initiatives. According to McKenzie, et al., (2001), employees have to be convinced that there is benefit from working in groups as it assists by increasing energies used to achieve business objectives.

McKenzie, et al., (2001), report that ***"gaining commitment requires support from senior management, the allocation of sufficient resources and funds, a dedicated champion, and recognition of the behavioural types of those involved".***

Research conducted by Bishop, Bouchlaghem, and Matsumoto (2005) highlight the necessity for someone to assume responsibility for the management of the knowledge intervention, or a „KM champion". The knowledge champion is a senior employee or someone who is able to collaborate and receive support from others. She/he should be able to convince the other employees of its benefits (McKenzie, et al., 2008).

McKenzie, et al., (2001), recommends that the champion must have business influence and understand the goals and direction that the organisation is heading.

The challenges discussed thus far cannot be viewed in isolation as they required concerted effort to overcome key variables inhibiting the success of KM. KM interventions can also assist with the process of creating and sustaining knowledge management.

4.10 Knowledge Management interventions

Pelz-Sharpe and Harris-Jones (2005) predicted the return of KM in the organisation as a revolutionised concept of „information management". Organisations are finally recognising that genetic search tools are not designed to efficiently work through their information chaos. The new requirement is the management of such information that simultaneously allows collation and capture of large amounts of information with sophisticated structures.

Dufour and Steane (2007:69) propose four individual groupings that explain KM interventions:

- ***"The classical approach - The classical position is established on the unitarist analysis of strategy, that formulation and implementation can be prescribed from one source of authority. It includes four core viewpoints, such as: Decision Making, Rational Tools, Rational Planning and the Ideal Conditions of Implementation Perspectives.***

- ***The contingency approach - The contingency approach to KM implementation posits that leadership has a variety of unequal effective structural forms and organisational processes for implementing KM strategies. The approach encompasses the following two main perspectives: the contingency perspective and the „fit"perspective.***

- ***The behavioural approach - The behavioural approach includes individual and organisational sources of conflict in implementing KM interventions. The behavioural approach includes three main views: The diffusion of innovation perspective, the corporate culture perspective, the organisational change and development (OCD) perspective.***

- ***The political approach - The political approach to KM implementation is primarily concerned with the impact of patterns of power and influence on the implementation processes and outcomes. The political approach includes the following viewpoints: the bureaucratic process perspective, the bargaining and negotiation perspective; and the symbolic implementation perspective".***

Skyrme (2000) refers to the range of KM interventions as broad, and focuses on organisational competitiveness and business operational success, for example:

- "creation of knowledge databases;
- inclusion of knowledge into business practices;
- development of knowledge facilities;
- reprocess of knowledge at customer support centers;
- introduction of mutual technologies such as intranets for rapid information access;
- knowledge webs - networks of experts who cooperate with each other across and outside an organisation"s functional and geographic boundaries".

The KM intervention must be supported by the appropriate KM system.

4.11 Knowledge management systems

A KM system incorporates skill and practice through group effort abilities and the reduction of time taken to make improved decisions. Personnel knowledge is embedded into KM systems for employees to replicate and use (Caravan, Gunnigle and Collins, 2001). Schlogl (2005), however,

provides a holistic view of KM systems compared to the conventional information system, in that it has the following additional features:

- it makes private information accessible,
- it learns from the users‟ use,
- it can initiate actions, and
- it can generate new information.

Ward (2007) explains that most companies, that draw on knowledge systems to produce innovative knowledge with the intention to generate proceeds, have to be aware of the knowledge accomplishments of competitors. Organisations should be aware of the knowledge work of others during conferences, keeping abreast of literature on the internet, reviewing magazines and maintaining contacts with prospective competitors can filter through knowledge within an organisation.

The KM system was predicted by Martinsons (1995) to preserve in-house expertise when human capital exits the organisation, foster superior decision-making stability, produce superior innovation and enhance cost-effectiveness in the transfer and sharing of knowledge.

Mayfield, Mayfield and Lunce (2005) confirm that information systems support the implementation of HRISs which encourage employees to contribute to knowledge sharing and decision-making. Skyrme (2000) reinforces the need for email, intranet and other electronic infrastructure as effective KM tools.

4.11.1 Electronic Document Management Systems (EDMS)

Groenwald (2004) refers to the need for electronic document management systems (EDMS) that enable reliable storage and back-up facilities. The main objective is to indentify, retrieve, manage and control all electronic data including email, messages, word documents, spread sheets, presentations, sound and video clips, and graphics. EDMSs foster improved organisational agility, that is, the ability to make parallel business enterprise systems to alter business and industry needs. The most promising benefit is the availability of information wherever and whenever it is needed. It assists with knowledge creation and sharing and information searches. This ensures easy access to knowledge created in electronic format. For example, email, intranet, groupware, file

management, document management systems, data warehouses and online information sources are all used to share ideas and information between employees.

Once created, such a system collaborates workflows and yields both employee tacit and explicit knowledge. Moreover, the controlling admission to documents and audit trails for each document ensures security, (Skyrme, 2000).

Often employees reinvent the wheel or fall short to efficiently find solutions because the knowledge required is not readily available and accessible to employees nor is it known or accessible to them (Skyrme, 2000). For example, during organisation downscales or restructure, businesses should save costly errors by retaining the current knowledge and practices within an EDMS. A critical initiative of the KM intervention is implementing or enhancing an intranet to facilitate such KM.

4.11.2 Intranets

The intranet is an influential intervention which can promote communication and collaboration in the organisation, simplify processes and afford employees updated information and knowledge.

Intranet-based knowledge systems include knowledge and make it easily available, at the same time reducing costs (Yen and Chou, 2001 and Haywood, 1999).

Gasco, Llopis, and Gonzales (2004: 272) list the following abilities of the intranet:

- **"collecting, communicating and sharing information with employees;**
- **automating access and administration to databases;**
- **simplifying the distribution of complex information through graphic representation;**
- **assisting managers to identify experts on the basis of such criteria as skills, knowledge, experience and place of residence;**
- **installing best practice files, which eliminates repetitive work for employees who regularly access such information".**

Ward (2007) suggests that the storage and the retrieval of organisational information and knowledge can be facilitated by implementing a corporate intranet as well as to proactively circulate, via email, information and company knowledge. KM research has noted the influence of intranet usage on employee perceptions where intranet usage was examined among the largest 500

organisations in Hong Kong (La1, 2001). Lai (2001) determined that the performance of the organisation and employee base was significantly favourable among organisations with intranet facilities that enable collaboration.

Begbie and Chudry (2002) investigated the perception of improved knowledge when using an organisational intranet system. An online survey was administered to 1200 users of an intranet. Results indicated that 70% of respondents believed that the intranet increased their specific market knowledge.

Murgolo-Poore, Pitt, Berthon and Prendegast (2003) identify a considerable relationship between intranet efficacy and perceptions of the quantity of information distributed through the intranet.

Stenmark (2002) comments that intranets offer a valuable IT platform for knowledge sharing.

Supporting views from Lam and Chua (2005) highlight that web-based technologies shape the essential mechanisms for knowledge sharing. Employees who have access to a knowledge sharing intranet will provide the active knowledge searcher with opportunities to (Holsapple, 2007):

- ***"explore the knowledge base to identify if the circumstance has been encountered before and the answer already is known;***
- ***identify situations and obtain additional confirmation; and***
- ***produce original knowledge, usually by generating action and recording the reaction".***

Intranets have contributed significantly to the technologies of KM systems (Scott, 1998; Chou and Binshan, 2002) and, according to Wickramshinghe, Gupta and Sharma (2005), intranets have been applied in four distinct ways since its technology:

- information publishing;
- information collaboration;
- transaction oriented applications and
- formal collaborative applications.

Hence, intranets are adequately suited as a strategic tool for knowledge storage and sharing as a result of their capabilities to enable distribution, connectivity and publishing (Tiwana and Ramesh, 2001). Complementing this view, Choo, Detlor and Turnbill (2000) refer to the intranet as a shared

platform for communicating and collaborating content. Similar to the intranet, video tools also enable a wider audience reach.

4.11.3 Video tools

A possible solution to share a wealth of knowledge is the use of the broadband-enabled ease and speed with which video can now be shared online (Anonymous, 2006). Video can be utilised as a tool for sharing corporate communications and knowledge. This implies that the information and knowledge would be quicker to view, more appealing and richer.

Consider the following example (Anonymous, 2006): A manufacturing organisation videotaped retiring operators assembling unusually multipart equipment. Even though the organisation maintained detailed process information for assembly, the operators' personal commentary about how to assemble multifaceted parts was invaluable to the remaining staff. Instead of merely saving the edited snippets with the process information, the staff used the HRIS knowledgebase to preserve the whole tape "as is" so they could watch and learn from the craftsman's movements.

Depending on the makeup of the job, the video tool can be more useful as a knowledge tool than written words on a page. If used appropriately, video tools can act as a supporting aid to communities of practice.

4.11.4 Communities of practice

Ward (2007) comments that the two key strategic questions to ask when compiling a knowledge strategy are which knowledge areas should be more or less exploited, and what resources need to be developed or bought to make this happen. Developing communities of practice (CoPs) is part of the people-based KM strategy.

CoPs recognise that knowledge has to be incessantly negotiated with the aid of interactive social networking processes (Hislop, 2003).

Heaton and Taylor (2002) add that most organisational knowledge is embedded in the processes of CoPs. In CoPs, more sophisticated information sharing can occur because the differences in local practices and culture within an organisation are considered, (Swan, et al., 1999).

A key tool to support such a knowledge base is the exit interview, also known as the Knowledge Exit Interview.

4.11.5 Knowledge exit interviews

With increasing competition in professional work and the loss of high performers due to the impact of „brain-drain" losses, many organisations are concerned about losing professional expertise. While many organisations face these problems, relatively few have developed effective, sustainable approaches to systematically capture and retain knowledge on either the organisational or departmental level (Van Winkelen and McDermott, 2008)

Basiulis (2009) agrees that those who leave the organisation take corporate knowledge with them but also acknowledges that there has never been a huge push to capture or pass down this corporate memory. Retention plans usually address retaining the workers themselves, however, the retention of corporate knowledge and past practices are equally important. Basiulis (2009) adds that KM practices that retain key knowledge allow employees to easily find the information they need to complete their jobs and help them see how their contribution in their jobs helps achieve the goals of the organisation.

One of the disruptive problems, when experts leave, is picking up the threads where employees have left unfinished business. Since many organisations have a variety of document management and storage systems, finding information from their files, locating the right passwords, maintaining contacts, knowing the hidden tricks of using certain physical or analytic tools and maintaining relationships with associations, suppliers and external organisations can become unexpectedly problematic when the expert leaves. The organisation is then confronted with a skills gap.

When a large number of experts in a skill group leave at once, the organisation can be left with a critical hole in its capabilities. In response, Van Winkelen and McDermott (2008) recommend „network development". In this instance, the KM workers identify the immediate colleagues of the departing expert or from previous projects, as well as newer staff and areas to be discussed by the expert. The expert prepares work processes that could be valuable to be discussed at the meeting. The interview generally commences with the description of the work processes by the expert, then the peers, followed by questions posed by the newer employees.

Other suggestions provided by Internet Two (2008: www.skyrme.com) include the following:

- Start early: Managers should plan the hand over as soon as someone announces his/her intention to leave. The recipients for the knowledge or the individual who will assume the departed employee‟s responsibilities should then be identified;
- Plan the exit handover: In the month or more before departure, a programme should be implemented that captures both explicit and tacit knowledge;
- Explicit knowledge: The employee must relocate the applicable information and material to shared folders; and
- Tacit knowledge: a discussion should be held to trigger activities completed by the departing employee to explain and document.

On the job knowledge can also be shared with job rotation.

4.11.6 Job rotation

Job rotation involves ***"the movement of employees through a range of jobs in order to increase interest and motivation, which can improve multi-skilling"*** (Ward, 2007).

Job rotation in industry does not receive the importance it deserves as an important tool for implementing HR strategy in an organisation. When completed correctly, job rotation enables the executives to build new knowledge and skills quickly. Formal learning to complement this deficiency, according to Ward (2007), may include the alternation of people‟s work functions, interdepartmental conferences, management communication sessions and email and intranet messages and other means of ensuring the constant internal distribution of knowledge, valuable suggestion proposals, and rewards for innovation and training programmes via employee appraisal. This can encourage contribution by all employees to the common stock of knowledge.

A commonly used practice requires a shift from rewarding only individuals to rewarding groups or incentivising that promotes sharing at team and organisational level (Watad and Peres-Alvares, 2007).

Through the process of working in different areas, discovering strengths and attributes of different related areas of one‟s expertise and exposure to different aspects related to work environment, employees gain knowledge. Job rotation assists with KM as the lessons learnt are captured and

documented. These can then be made available via the HRIS to accelerate individual and organisational learning as well as prevent past mistakes.

Basiulis (2009) refers to other interventions that allow tacit knowledge to be passed on effectively such as promoting the mentor-protégé relationship. Shadowing a mentor allows less-experienced employees to observe their more-experienced colleagues in their work flow to observe how they conduct their daily activities.

4.12 Conclusion

This chapter explained the key concepts of knowledge, tacit and explicit knowledge and KM. The conversion of knowledge was also discussed as well as the influence of technology, culture and intellectual capital on KM. The chapter concluded with insight to drive and maintain KM, especially in the South African organisation, as well as its associated challenges and tools to sustain KM.

The next chapter explains the research methodology and design components used in the study.

CHAPTER FIVE
RESEARCH METHODOLOGY

5.1 Introduction

This chapter incorporates the main objectives of the study, the rationale for selecting the chosen research method, the development of the questionnaire, the sampling design, and the data collection methods and data analysis techniques.

5.2 Research objectives

This research study aims to establish the impact that Human Resource Information Systems (HRISs) will have, as a tool, for KM in a HR environment. Specifically, the objectives of this study are:

- To assess perceptions of KM in terms of knowledge assets, sharing and challenges;
- To determine perceptions of HRISs in terms of their usage and technology;
- To specify whether there is a relationship between KM (assets, sharing and challenges) and HRIS (usage and technology); and
- To examine the influence of the biographical data on the perceptions of KM and HRISs, respectively.

5.3 Hypothesis testing

The hypotheses formulated in chapter one (1.5) were tested using the various statistical techniques.

5.4 Sampling design

Sampling involves the *"**selection of a sufficient number of elements from the population so that their properties/characteristics can be generalised to the population**"* (Sekaran, 2003).

Various aspects of the sample design such as population, sample, sample design and sampling techniques are used in the research design.

5.4.1 Description of the population

Polit and Hungler (1999:37) define population as ***"an aggregate or totality of all the objects, subjects or members that conform to a set of specifications".***

For the purpose of this study, the target population comprises HR employees from three South African organisations within the retail industry. Since this study was conducted in the context of HRM, the population comprised HR personnel. The population from the three organisations was ninety-one (91).

5.4.2 Description of the sample

As the population size (N= 91) was small, questionnaires were distributed to all the elements in the population. Accordingly, this study can be classified as a census (Sekaran, 2003). Seventy (70) subjects completed the questionnaire, thereby generating a response rate of 77%, which includes people from different races, gender, age groups and positions within the HR department.

5.4.3 Composition of the sample

The composition of the sample, as depicted in Table 5.1, summarises the biographical variables of the 70 employees of the selected organisations, who responded to the questionnaires. The response rate achieved was 77%, which was sufficient to interpret the results.

Figure 5.1: Graphical representation of the gender groups

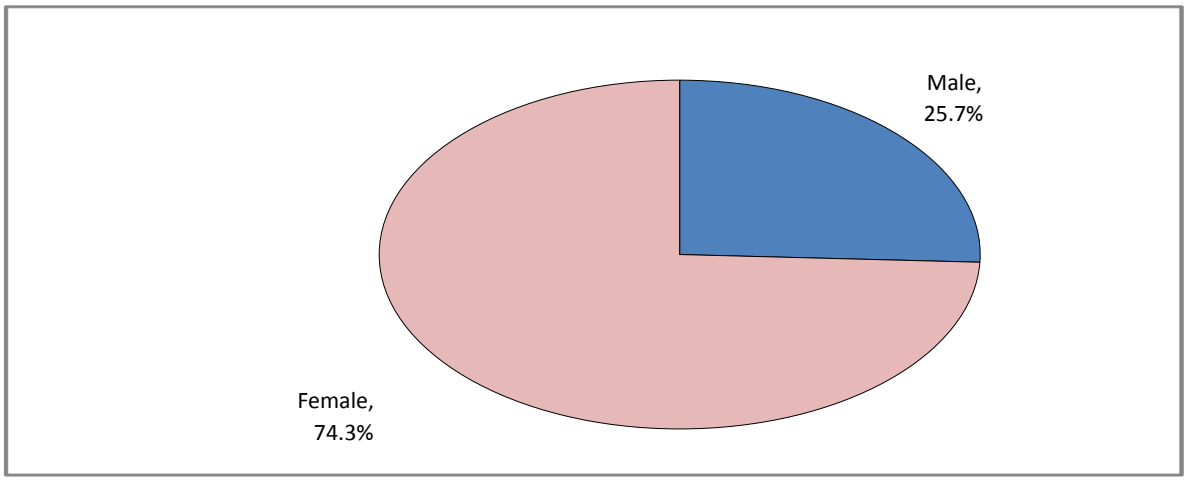


Figure 5.1 illustrates the gender distribution of the total sample.

Table 5.1: Frequency distribution and percentages of the gender groups

		Total	
		Count	**% of Total**
Gender	Male	18	25.7%
	Female	52	74.3%
Total		70	100.0%

Table 5.1 reflects the percentage calculated from the total sample.

Of the total sample 25.7% were male and 74.3% were female, respectively. The 48.6% difference in gender indicates a lack of diversity which can make it difficult to implement KM strategies, as gender diversity also plays an effective role in knowledge co-creation and generation.

Figure 5.2: Graphical representation of the age groups

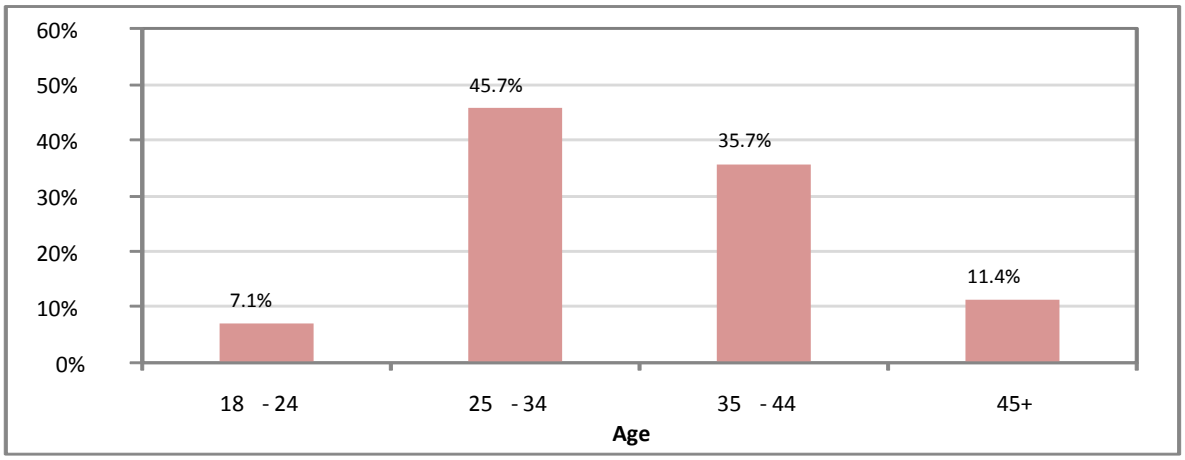


Figure 5.2 reflects the age distribution of the total sample.

Table 5.2: Frequency distribution and percentages of the age groups

		Total	
		Count	**% of Total**
Age	18-24	5	7.1%
	25-34	32	45.7%
	35-44	25	35.7%
	45+	8	11.4%
Total		70	100.0%

Table 5.2 reflects the % age distribution calculated from the total sample.

The highest percentage of respondents (45.7%) comprised the 25-34 year-old age group. The second highest percentage of respondents (35.7%) was from the 35-44 year-old age group, followed by the 45-54 year-old bracket (11.4%). The lowest percentage of respondents (7.1%) was from the 18-24 year-old bracket. The findings of the study show that the difference in percentage between employees who were of retirement age (11.4%) and those at the ages of the Y Generation (45.7%) was (34.3%).

Figure 5.3: Graphical representation of the job status groups

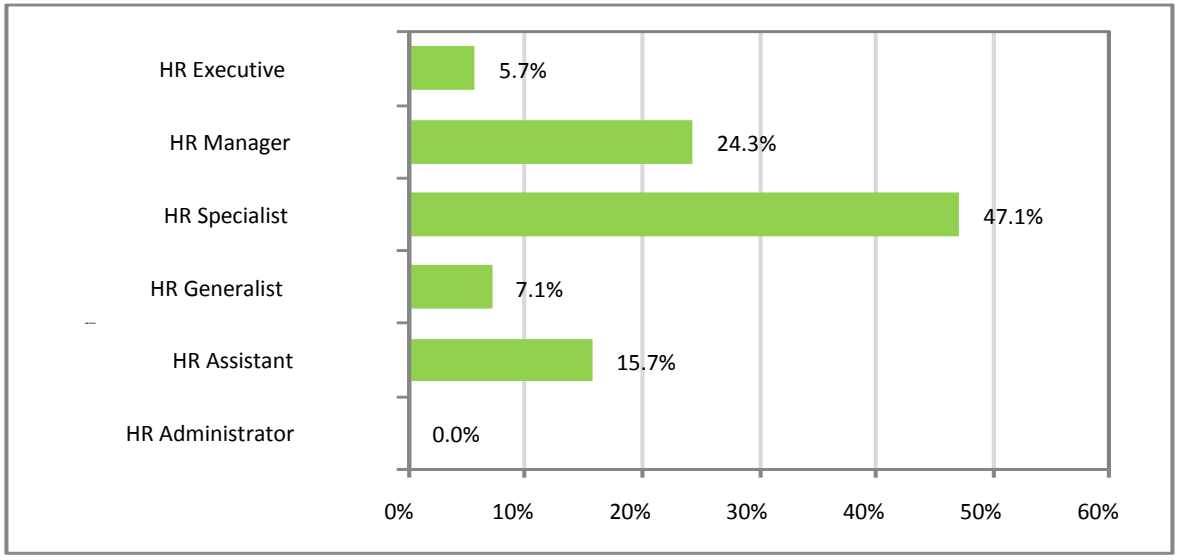


Figure 5.3 reflects the job status of the total sample in terms of their job status.

Table 5.3: Frequency distribution and percentages of the job status groups

		Total	
		Count	**% of Total**
Job Status	HR Assistant	11	15.7%
	HR Generalist	5	7.1%
	HR Specialist	33	47.1%
	HR Manager	17	24.3%
	HR Executive	4	5.7%
Total		70	100.0%

Table 5.3 reflects the % calculated from the total sample.

The highest percentage (47.1%) of respondents were HR specialists, while 24.3% of respondents were HR generalists. 15.7% of respondents were HR assistants and the lowest response rate (5.7%) were HR Executives.

Figure 5.4: Graphical representation of the race groups

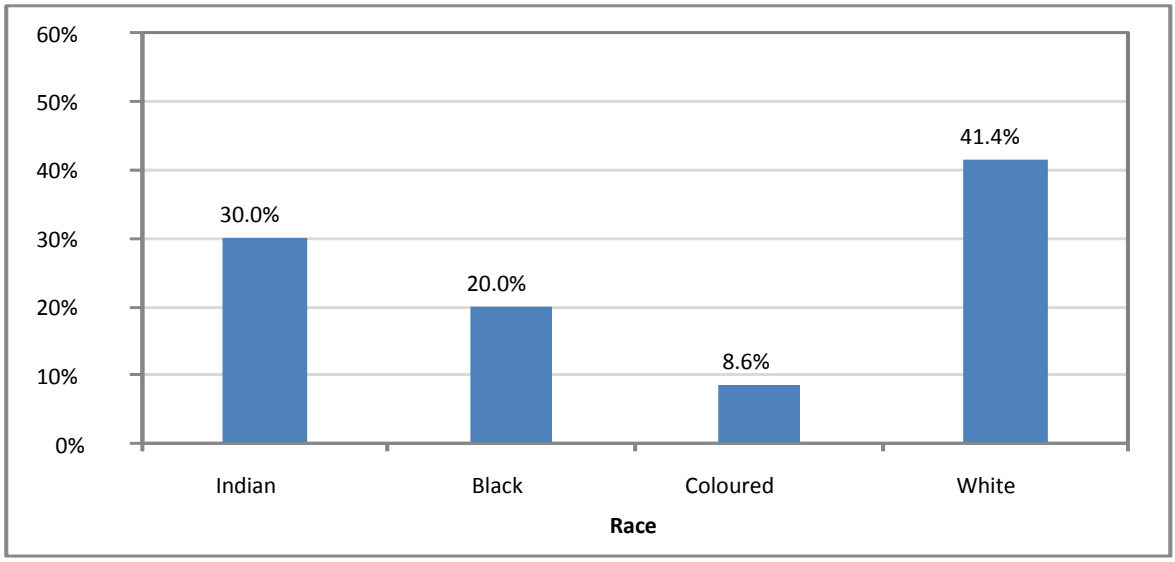


Figure 5.4 reflects the race of the total sample.

Table 5.4: Frequency distribution and percentages of the race groups

		Total	
		Count	**% of Total**
Race	Indian	21	30.0%
	Black	14	20.0%
	Coloured	6	8.6%
	White	29	41.4%
Total		70	100.0%

Table 5.4 reflects the % calculated from the total sample.

Figure 5.4 indicate that 41.4% of respondents were white, 30% were Indian, 20% were black, while and 8.6% were coloured respondents. The difference in race groups depicts clearly that, although employment equity is taken into cognisance, white race groups is still the majority.

Figure 5.5: Graphical representation of tenure

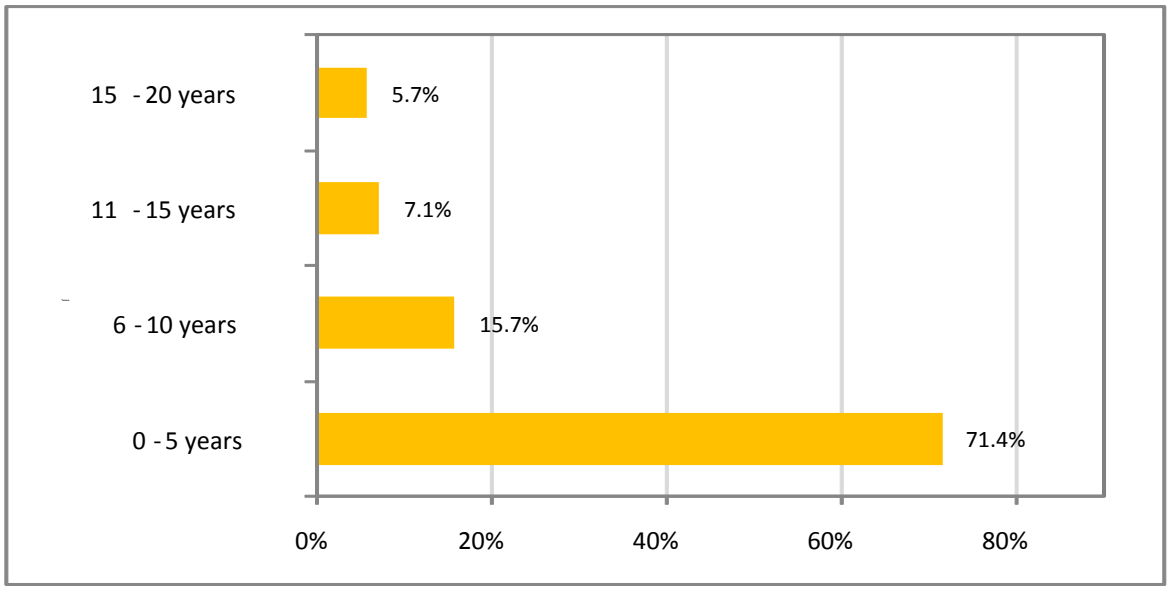


Figure 5 reflects the tenure of the total sample.

Table 5.5: Frequency distribution and percentages of tenure

		Total	
		Count	% of Total
Tenure	0-5 years	50	71.4%
	6-10 years	11	15.7%
	11-15 years	5	7.1%
	15-20 years	4	5.7%
Total		70	100.0%

Table 5.5 reflects the % calculated from the total sample.

The sample composition of the job tenure of the group used in this study is reflected in Figure 5.5. The highest percentage of respondents (71.4%) were employed between 0 and 5 years while 15.7% were employed between 6 and 10 years, 5.7% were employed between 11-15 years and 5.7% of respondents between 15 and 20 years. This finding indicates that most people working in the HR department had tenure of 0-5 years.

5.5 Data collection

Data collection is an integral element of the research process. A variety of data collection methods can provide valuable information for the purposes of analysis, testing hypotheses and answering the research questions (Sekaran, 2003:219). To generate data for the study, a questionnaire was developed.

De Vaus (2002:67) explains that ***"the questionnaire is one of the most widely used data collection techniques within the survey data collection methods".***

Questionnaires are considered suitable for speed and efficiency and when time and costs are constraints (Saunders, Thornhill and Lewis, 2007:358).

5.5.1 The measuring instrument

The purpose of the measuring instrument is to assess subjects" perceptions of KM and HRISs.

A covering letter (Appendix A and Appendix B), which was attached to each questionnaire, broadly explained the purpose of the study and invited subjects to participate by signing the consent form (Appendix C). Subjects were assured of their anonymity and confidentiality of their responses. Furthermore, subjects were advised that they were free to decline and/or withdraw from participation in the study.

The questionnaire comprised of three sections, namely, Section A: Biographical data, Section B: KM practices and Section C: HRISs.

5.5.1.1 Section A: Biographical Data

Biographical Data (Section A) contained questions pertaining to the details of employees, relating to age, gender, race, tenure and job level. A nominal scale was used which comprised of categories as options to choose from per biographical variable.

5.5.1.2 Section B: Knowledge management

This section of the questionnaire consisted of 14 statements that assessed subjects‟ perceptions of KM. Specifically, the 14 questions focused on knowledge assets, knowledge sharing and knowledge challenges.

Knowledge assets: refer to human (attitudes, perceptions and abilities of employees), organisational (brands, patents and other intellectual property) and relational (knowledge and acquaintances with customers, competitors and communities) and the intellectual capital of employees (Rodgers, 2003).

Knowledge challenges: refers to the difficulties experienced within the environment, organisation and employees who fail to promote and support a culture where employees willingly share and contribute to a wealth of knowledge for the benefit of all parties concerned.

Knowledge sharing: is characterised by an environment where management supports employees to regularly communicate and learn in various forms to deliver the right knowledge at the right time in the right format which benefits all parties involved.
Questions 1, 2, 5, 6 and 7 related to knowledge assets, Questions 3, 4, and 8 pertained to Knowledge sharing and Questions 9, 10, 11, 12, 13 and 14 related to knowledge challenges.

A Likert scale is used to measure the rated responses. In terms of the questionnaire, the Likert scale is a five-point scale ranging from strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). Higher values on the 5 point Likert-type scale indicate positive responses to knowledge assets and sharing within the organisation. High responses to questions 9-14 indicate the non-existence of KM challenges.

5.5.1.3 Section C: Human Resource Information Systems

This section consisted of 14 statements pertaining to the use of HRIS within the respondent‟s HR department. Specifically, the 14 questions focused on HRIS usage and technology.

Use of technology to share information: refers to the function, operation, support or management of computer-based information systems, including software and hardware components to amass, protect, administer, transfer, input, output, and retrieve information.

Use of HRIS: Use of HRIS refers to the ability of the HRIS to store, manage and access information and knowledge for: a) generic purposes; and b) specific HR purposes.

Questions 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 pertained to HRIS usage (Questions 15-19 referred to the generic use of HRIS while questions 20-24 referred to the specific use of HRIS in the context of HRM, and Questions 25, 26, 27 and 28 related to technology.

A Likert scale was used to measure the rated responses. The Likert scale is a five point scale ranging from strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). Higher values on the 5 point Likert-type scale indicate the strong usage of HRIS and technology.

5.5.2 Pretesting and pilot testing

Pilot testing is critical to any study. Before the questionnaire was administered, it was subjected to pilot-testing among ten potential respondents to correct any bias, misinterpretations or general errors. There were spelling errors that were corrected and key definitions of the concepts were not evident. Hence definitions were introduced at the beginning of the questionnaire.

5.5.3 Administration of the questionnaire

The questionnaires were electronically administered to the population or hand delivered. Both electronic and hand-delivered questionnaires yielded equal response rates. Once completed, the questionnaires were returned electronically or hand delivered, printed/collected and secured in an envelope to ensure confidentiality. Of the ninety-one (91) questionnaires that were administered, seventy (70) were received. All 70 of the returned questionnaires were usable. This indicated a response rate of 77%.

5.6 Data analysis

The nature of the study required the researcher to use Microsoft Excel and Statistical Packages for Social Scientists (SPSS) for data capturing, analysis and interpretation.

Descriptive and inferential statistical were used for data analysis.

5.6.1 Descriptive Statistics

Sekaran (2003:416) describes descriptive statistics as "***statistics that provide information about a set of data"***.

It also allows the transformation of raw data into an outline that portrays the phenomena of interest and includes frequencies, measures of central tendencies and measures of dispersion (Sekaran, 2003:416).

5.6.1.1 Frequencies and percentages

Frequencies and percentages were obtained for the relevant variables. These were used to ascertain the profile of the sample.

5.6.1.2 Measures of central tendency

Central tendencies are the common measures of location and consist of the mean, mode and medium.

- The mean score is defined by Sekaran (2003:420) as an average score of the data.
- Median refers to the score which has one half of the scores on either side of it when the scores have been arranged in ascending and descending order (Huysamen, 1998).
- Mode can be described as the most frequently occurring number in a set of data (Sekaran, 2003:420).

The mean, medium and mode methods assist with the measurement of central tendencies.

5.6.1.3 Measures of dispersion

Standard deviation and variance are measures of dispersion (Saunders, Thornhill and Lewis, 2007:612).

- Standard Deviation: is a statistical measure that expresses the average deviation about the mean and is calculated as the square root of the variance (Wegner, 1993). The standard deviation is the square root of the variable.
- Variance: indicates the extent to which the data is dispersed (Sekaran, 2003:425).

The range and variance measures the variability that exists in the set of observations (Sekaran, 397:2003).

5.6.2 Inferential statistics

According to Cooper and Schindler (2006:129), inferential statistics based on the sample results allow for generalisations to be made to the population from which samples were selected. One sample Kolmogrov-Smirnov test was used to ascertain whether the data follows a normal distribution or not. For data that follows normal distribution, parametric tests are used and non-parametric tests for data that does not follow a normal distribution. The results showed that data representing knowledge sharing and technology do not follow a normal distribution. Therefore, non-parametric statistics were used to test the data.

5.6.2.1 Non-parametric tests

Non-parametric tests are designed to test data this is not normally distributed.

(a) Spearman rank order correlation: The non-parametric equivalent of the Pearson‟s product-moment correlation coefficient is the Spearman rank-order correlation. This statistical test assesses the strength of the relationship between two ranked data variables.

(b) Kruskal-Wallis Test: This non-parametric test is used when the dependent variable is on an ordinal scale, and the independent variable is normally scaled (Sekaran, 2003:404). Kruskal-

Wallis ANOVAs were computed to determine differences in means between categories of race, tenure, job status and age.

(c) Mann-Whitney Test: ***"This non-parametric test is used for examining significant differences when the dependent variable is measured on an ordinal scale and the independent variable on a nominal scale"*** (Sekaran, 2003:404).

In this study, the t-test was used to determine differences in means between males and females.

Non-parametric tests provide input to the statistical analysis of the questionnaire.

5.7 Statistical analysis of the questionnaire

Reliability and Validity ensure that the test is without bias and consistent as well as to ensure that the measuring instrument measures what the researcher intends.

5.7.1 Validity

Validity refers to the ability of the questionnaire to measure what it is intended to measure (Saunders, Lewis and Thornhill, 2007:614). Various forms of validity include:

5.6.1.1 content (face) validity – refers to the extent to which the measurement instrument provides adequate coverage of the research questions (Saunders, Lewis and Thornhill, 2007:614);

5.6.1.2 criterion-related (predictive) validity – refers to the ability of the questions to make accurate predictions (Sekaran, 2003:206); and

5.6.1.3 construct validity – refers to how well the results obtained from the measuring instrument fits the theories around which the test is designed (Sekaran, 2003:206).

For the purpose of this study, content validity was established.

5.7.2 Reliability: Cronbach's Coefficient Alpha

Reliability refers to consistency; whether or not the questionnaire will produce similar findings at different times and under different circumstances. The three common approaches to testing reliability include (Sekaran, 2003:205):

5.7.2.1 test-retest – measures the reliability co-efficient obtained with a repetition of the same measure on a second occasion (Sekaran, 2003:205);

5.7.2.2 internal consistency (reliability) – correlates the responses to each question in the questionnaire with those to other questions in the questionnaire. There are a variety of measures for calculating internal consistency, of which the most frequently used is Cronbach‟s Alpha. (Saunders, Lewis and Thornhill, 2007:265); and

5.7.2.3 alternate form – compares responses to other alternate forms of the same question or group of questions (Saunders, Lewis and Thornhill, 2007:265).

The Cronbach‟s Alpha internal reliability was attained to test the internal reliability of the data. The objective was to assess the internal consistency. Acceptable reliability is generally above 0.60, 0.70-0.80 is good and over 0.80 is excellent (Sekaran, 2003:205). The Chronbach‟s alpha for this study was .812 which indicates an excellent consistency result.

5.8 Conclusion

It is evident that many factors need to be considered when choosing an appropriate research methodology. The topic studied by the researcher and the specific research questionnaire were primary drivers in the chosen methodology. The research methodology consists of a series of steps, namely, 1) sampling design, 2) data collection, 3) data analysis and 4) statistical analysis.

This chapter provided an overview of the intended research methodological approach to this investigation. Descriptive statistics such as frequencies and percentages were used to determine key findings on the purpose of the study supported by other descriptive statistics of measures of central dispersion and tendencies. Inferential statistics were used to make meaningful inferences and conclusions about the relationships in the study. Factor analysis and Cronbach‟s Alpha were used to statistically measure the goodness of the questionnaire.

The next chapter will portray a detailed presentation of the results of the study.

CHAPTER SIX
PRESENTATION OF RESULTS

6.1 Introduction

This chapter presents the results of the research methodology described in Chapter Five. The results presented will determine the employee perceptions of knowledge management and HRIS dimensions. The chapter begins with the presentation of the results of the descriptive and inferential statistics; presentation of the hypothesis tested and concludes with the psychometric properties of the questionnaire.

6.2 Objectives of the study

This research study aims to establish the impact that Human Resource Information Systems (HRISs) will have, as a tool, for KM in a HR environment. Specifically, the objectives of this study are:

- To assess perceptions of KM in terms of knowledge assets, sharing and challenges;
- To determine perceptions of HRISs in terms of its usage and technology;
- To specify whether there is a relationship between KM (assets, sharing and challenges) and HRIS (usage and technology); and
- To examine the influence of the biographical data on the perceptions of KM and HRISs, respectively.

Descriptive analysis was undertaken on the key variables included in the objectives of the study and the results are presented the sections that follow.

6.3 Descriptive Statistics

The means and standards deviations relating to the KM and HRIS dimensions are illustrated below.

6.3.1 Knowledge management dimensions

Table 6.1 below shows the results of the means and standard deviations for the knowledge Management dimensions.

Table 6.1: Means and standard deviations of the knowledge management dimensions

Knowledge Management Dimensions	Total		
	Mean	N	Std. Deviation
Knowledge assets	3.6286	70	.52119
Knowledge challenges	3.0643	70	.43618
Knowledge sharing	3.1524	70	.81390

The mean score for knowledge assets (M= 3.6286) shows that respondents agreed that HR employees valued and recognised the human and intellectual capital of employees. The mean score of (M= 3.0643) indicated that respondents were uncertain whether there were knowledge challenges while the mean score for knowledge sharing (M= 3.1524) indicated that there was slight agreement that knowledge was shared. The highest mean was knowledge assets (M= 3.6286), followed by knowledge sharing (M= 3.1524) and knowledge challenges (M= 3.0643).

The standard deviations revealed some variations in the responses of the participants with the highest being for knowledge sharing (SD= 0.81) followed by knowledge assets (SD= 0.52119) and knowledge challenges (SD= 0.43618).

6.3.2 Human resource information system dimensions

The results in Table 6.2 below show the means and standard deviations for the Human Resource Information System Dimensions.

Table 6.2: Means and standard deviations of the HRIS dimensions

HRIS Dimensions	Total		
	Mean	N	Std. Deviation
Use of HRIS	3.0157	70	.77453
Technology	3.6786	70	.71239

Respondents indicated a neutral response to the use of HRISs (M= 3.0157) while there was agreement that technology was used as a tool for sharing information (M= 3.6786).

The standard deviation for use of HRIS (SD= 0.77453) and technology (SD= 0.71239) indicated variations in the responses of the respondents.

6.4 Inferential statistics

Inferential statistics were applied to test the hypotheses formulated.

6.4.1 Hypothesis 1

There is a statistically significant correlation between the dimensions of knowledge management and the use of HRIS.

Table 6.3 below shows the results of the correlation analysis.

Table 6.3: Correlation analysis between KM dimensions and the use of HRISs

Knowledge Management Dimensions	Use of HRISs
Knowledge assets	.489**
Knowledge challenges	-.591**
Knowledge sharing	.486**

**p < 0.01

There was a statistically positive correlation between knowledge assets (r=.489; p< 0.01) and knowledge sharing (r=.486; p< 0.01) and the use of HRIS, respectively.

There was a statistically negative correlation between knowledge challenge and the use of HRIS (r=-.591; p< 0.01).

6.4.2 Hypothesis 2

There was a statistically significant correlation between the dimensions of knowledge management and technology.

Table 6.4: Correlation analysis between KM dimensions and technology

Knowledge Management Dimensions	Technology
Knowledge assets	.304**
Knowledge challenges	-.400**
Knowledge sharing	-.402**

**p < 0.01

There was a statistically positive correlation between knowledge assets and technology (r=.304; p< 0.01).

There was a statistically significant negative correlation between knowledge challenges and technology (r=-.400; p< 0.01) and knowledge sharing and technology (r=-.402; p< 0.01).

6.4.3 Hypothesis 3

There was a statistically significant difference in the perceptions of KM dimensions (knowledge assets, sharing and challenges) among the biographical variables.

a) Gender

Table 6.5: Knowledge management dimensions by gender

Knowledge Management Dimensions	Mann-Whitney U	Z	p
Knowledge assets	425.500	-0.578	0.564
Knowledge challenges	417.000	-0.691	0.489
Knowledge sharing	434.500	-0.456	0.649

There was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing between males and females respectively ($p > 0.05$).

b) Age

Table 6.6: Knowledge management dimensions by age

Knowledge Management Dimensions	Chi-Square	df	p
Knowledge assets	1.981	3	0.576
Knowledge challenges	1.701	3	0.637
Knowledge sharing	4.481	3	0.214

There was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing among age groups respectively ($p > 0.05$).

c) Job Status

Table 6.7: Knowledge management dimensions by job status groups

Knowledge Management Dimensions	Chi-Square	df	p
Knowledge assets	1.326	4	0.857
Knowledge challenges	2.611	4	0.625
Knowledge sharing	4.784	4	0.310

There was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing among levels of job status respectively (p> 0.05).

d) Race

Table 6.8: Comparisons of means between race groups for KM dimensions

Knowledge Management Dimensions	Chi-Square	df	p
Knowledge assets	2.524	3	0.471
Knowledge challenges	7.991	3	0.046*
Knowledge sharing	3.111	3	0.375

There was no statistically significant difference in the perceptions of knowledge assets and knowledge sharing among the race groups (p> 0.05).

There was a statistically significant difference in the perceptions of knowledge challenges among the race groups (p< 0.05).

e) Tenure

Table 6.9: Knowledge management dimensions by tenure

Knowledge Management Dimensions	Chi-Square	df	p
Knowledge assets	.903	3	0.825
Knowledge challenges	7.197	3	0.066
Knowledge sharing	5.660	3	0.129

There was no statistically significant difference in the perceptions of knowledge assets, sharing and challenges among the tenure groups respectively (p> 0.05).

6.4.4 Hypothesis 4

There was a statistically significant difference in the perceptions of HRIS dimensions (Use of HRIS and technology) among the biographical variables.

a) Gender

Table 6.10: HRIS Dimensions by gender

HRIS Dimensions	Mann-Whitney U	Z	p
Use of HRIS	457.000	-0.148	0.882
Technology	390.500	-1.060	0.289

There was no statistically significant difference in the perceptions of the use of HRISs and technology as a tool for sharing information between males and females, respectively ($p > 0.05$).

b) Age

Table 6.11: HRIS dimensions by age

HRIS Dimensions	Chi-Square	df	p
Use of HRIS	8.167	3	0.043*
Technology	12.313	3	0.006*

There was a statistically significant difference in the perceptions of the use of HRISs and technology as a tool for sharing knowledge among age groups, respectively ($p < 0.05$).

c) Job status

Table 6.12: HRIS dimensions by job status

HRIS Dimensions	Chi-Square	df	p
Use of HRIS	12.361	4	0.015*
Technology	13.355	4	0.010*

There was a statistically significant difference in the perceptions of the use of HRIS and technology among job status groups, respectively ($p < 0.05$).

d) Race

Table 6.13: HRIS dimensions by race groups

HRIS Dimensions	Chi-Square	df	p
Use of HRIS	10.112	3	0.018*
Technology	3.659	3	0.301

There was a statistically significant difference in the perceptions of the use of HRISs among the race groups ($p < 0.05$).

There was no statistically significant difference in the perceptions of technology as a tool for sharing knowledge among the race groups ($p > 0.05$).

Table 6.14: HRIS dimensions by tenure

HRIS Dimensions	Chi-Square	df	p
Use of HRIS	.818	3	0.845
Technology	1.865	3	0.601

There was no statistically significant difference in the perceptions of the use of HRIS and technology as a tool for sharing knowledge and tenure, respectively ($p > 0.05$).

6.5 Psychometric properties of the questionnaires

Reliability and validity are important for the final statistical an analysis of the questionnaire.

6.5.1 Reliability

TABLE 6.15

RELIABILITY STATISTICS

Reliability Statistics

Cronbach's Alpha	N of Items
.812	24

Cronbach"s co-efficient alpha (r= 0.812) showed that the questionnaire had a very high reliability.

6.5.2 Validity

As mentioned in the previous Chapter Five, face validity was established.

6.6 Conclusion

This chapter presented the results of the study, using both descriptive and inferential statistics.

Upon conducting an analysis of the data, conclusions can be made regarding the various dimensions of KM and HRIS usage. Inferences were drawn concerning the demographic variables and the various dimensions (knowledge assets, sharing and challenges and use of HRISs and technology).

The results of the means and standard deviations for the knowledge management and HRISs dimensions were presented.

Inferential statistics were applied to test the hypotheses formulated. The KM dimensions and the use of HRISs results indicated that there was a statistically positive correlation between knowledge assets ($r=.489$; $p< 0.01$) and knowledge sharing ($r=.486$; $p< 0.01$) and the use of HRIS, respectively, whilst there was a statistically negative correlation between Knowledge challenge and the use of HRIS ($r=-.591$; $p< 0.01$).

The KM dimensions and technology results indicated that there was a statistically positive correlation between knowledge assets and technology ($r=.304$; $p< 0.01$) and there was a statistically significant negative correlation between knowledge challenges and technology ($r=-.400$; $p< 0.01$) and knowledge sharing and technology ($r=-.402$; $p< 0.01$).

Hypothesis testing among the KM dimensions (knowledge assets, sharing and challenges) and the biographical variables indicated that there was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing between males and females, respectively ($p> 0.05$). Moreover, there was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing among age groups, respectively ($p> 0.05$). Also, there was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing among levels of job status, respectively ($p> 0.05$), and there was no statistically significant difference in the perceptions of knowledge assets among the race groups ($p> 0.05$). There was a statistically significant difference in the perceptions of knowledge challenges among the race groups ($p< 0.05$), and there was no statistically significant difference in the perceptions of knowledge sharing among the race groups ($p> 0.05$). In addition, there was no statistically significant difference in the perceptions of knowledge assets, sharing and challenges among the tenure groups, respectively ($p> 0.05$).

Hypothesis testing among the HRIS dimensions (use of HRIS and technology) and the biographical variables indicated that there was no statistically significant difference in the perceptions of the use of HRISs and technology as a tool for sharing information between males and females, respectively ($p> 0.05$), and there was a statistically significant difference in the perceptions of the use of HRISs and technology as a tool for sharing knowledge among age groups, respectively ($p< 0.05$). Moreover, there was a statistically significant difference in the perceptions of the use of HRIS and technology among job status groups, respectively ($p< 0.05$), and there was a statistically significant difference in the perceptions of the use of HRISs among the race groups ($p< 0.05$). There was no

statistically significant difference in the perceptions of technology as a tool for sharing knowledge among the race groups ($p > 0.05$) and there was no statistically significant difference in the perceptions of the use of HRIS and technology as a tool for sharing knowledge and tenure, respectively ($p > 0.05$).

Cronbach"s co-efficient alpha ($r = 0.812$) showed that the questionnaire had a very high reliability and face validity was established.

The next chapter that follows will incorporate a detailed discussion of the results of the study.

CHAPTER SEVEN
DISCUSSION OF RESULTS

7.1 Introduction

This chapter will explain the findings of the empirical research and compare these with the findings of the previous research.

7.2 Discussion of survey results

The key variables investigated in this study include KM and HRIS and will form the basis of the discussion of the results.

7.3 Knowledge management dimensions

Respondents have indicated varied responses to the concept of managing knowledge. It is possible that respondents did not understand the concepts due to their neutral responses in certain instances. Literature has indicated that very limited time, energy and focus are currently being spent on creating and promoting knowledge management to encourage knowledge information sharing and collaboration among employees (Bishop, et al., 2008).

The knowledge management dimensions include knowledge assets, knowledge sharing and knowledge challenges.

7.3.1 Knowledge assets

Rodgers (2003) explains that knowledge assets exist as intangible, human (intellectual capabilities, attitudes, perceptions and abilities of employees), organisational (brands, patents and other intellectual property) and relational (knowledge and acquaintances with customers, competitors and communities) components.

The mean score for knowledge assets (M= 3.6286) indicates that respondents agree that their human attributes, organisational properties and relational acquaintances are viewed as assets. The

knowledge asset components responded to by participants included: 1) understanding of knowledge management and its value; 2) usage of knowledge management; 3) effectiveness of intellectual capital; and 4) the contribution of human capital to the competitive advantage.

These results are beneficial to the organisation because, according to Green (2006), understanding the significance of its knowledge assets assists an organisation to extend, maintain and improve its efficacy and/or competitive advantage. Research conducted by Moustaghir (2000) concludes that well-managed knowledge assets enhance business performance.

Freeze and Kulkarni (2007) acknowledge that KM has continued to identify the leveraging of knowledge as assets but the description of what a knowledge asset is, can be contentious. Organisations must account for profitability of their knowledge assets as investments and examine to what extent the assets add value to operating expenses and net incomes (Green, 2006).

Dunford (2000) found that consulting firms generally consider KM a great core asset for gaining competitive advantage. The same principle should be applied to the three retail organisations researched in this study in order to enhance the perceptions of knowledge as a strategic asset. Freeze and Kulkarni (2007) recommend that to make effective use of knowledge assets, organisations must be able to identify and quantify the knowledge resources.

Similar to Rodgers‟ (2003) interpretation of knowledge assets, Borghoff and Pareschi (1995) propose that KM be included on the balance sheet as „intangible assets‟, which essentially justifies the organisation‟s intellectual capital. Such intangibles include the employee‟s competence, the internal structure of the organisation, organisational models and patents, processes, technological systems, IT infrastructure, brand names, reputations of the business and relationships developed internally and externally (Papoutsakis, 2006).

Swedish companies have become famous for developing their own knowledge auditing methodologies and publishing their own intellectual balance sheet (Borghoff and Pareschi, 1995).

Corrall (1998), cited in Schogl (2005), explains the link between intellectual capital and KM as dependent on the measurement of knowledge assets. Schogl (2005) agrees that the capability, knowledge and experience of employees should be retained to avoid the loss of corporate memory.

In a HR context, organisations are required to look beyond the traditional management of people and instead focus on their organisational capabilities and knowledge (Saint-Onge and Wallace, 2003).

The role of the HR professional alludes to combining individual, team and organisational learning and development that benefits all stakeholders. HR, as a custodian, for human capital can support the recognition of intellectual capital and ensure that it is duly recognised and rewarded to guarantee continuous growth of value. Interestingly, the value of knowledge in human capital is described by Chatzel (2002) as the only active asset in the organisation. HR acts as a catalyst to generate and sustain the knowledge asset.

Hence, although respondents indicated that their human attributes, organisational properties and relational acquaintances are viewed as an asset, increasing HR‟s ability to understand how to recognise, store and influence the value of the knowledge asset can enhance its competitiveness.

7.3.2 Knowledge sharing

Knowledge sharing is characterised by an environment where management supports employees to regularly communicate and learn in various forms to distribute the correct knowledge at the correct time in the correct format which benefits all parties involved. The role of HRM is now characterised as facilitating knowledge, building relationships and managing the human capital to increase the organisational value of the knowledge asset. For example, through the facilitation of knowledge, HR focuses on learning and development of employees to sustain a stronger employee base. This is conducted through HR activities that include identifying sources of employee knowledge, making knowledge available to employees, building problem-solving skills, strategy formulation and new functions such as KM (Lengnick-Hall and Lengnick-Hall, 2003).

The mean for knowledge sharing is M= 3.1524, which indicates that ,respondents were uncertain whether: 1) there was great effort used to make knowledge that was known and accessible (for example, by sharing best practices);2) Management support and encouragement of KM; and 3) Employees rewarded for what they know.

The knowledge sharing results may have serious implications for the organisation as research indicates that organisations that do not succeed at creating, exploiting, applying and mobilising knowledge lose the opportunity to maintain sustainable competitive advantage. This is largely due to the increasingly rapid flow of global information and the growing recognition of the importance of intellectual capital that dominates organisational success (Iles, Yolles and Altman, 2001).

According to the study conducted by McAdam and Redi (2001), knowledge transfer, organisational learning, knowledge capture and sharing of organisational knowledge are considered essential elements of knowledge and knowledge management. The most pronounced small-medium enterprise (SME) organisational differences identified in research include organisational knowledge, organisational learning, knowledge capturing and sharing as well as transfer of knowledge. The highest response was recorded for larger sector organisations. This finding was attributed to the larger organisations employing an increased number of resources to develop strategic KM systems.

The above results could have similar implications on this study as the HR departments surveyed were not larger than 30 employees with pressurised demands of the job. A possible solution, as noted by Alavi and Leidner (2001), are KM systems that draw on various IT capabilities which lead to a gamut of forms of KM support. In addition, Schogl (2005) conducted research that confirms that KM ensures that work practices improve the generation and sharing of new and collaboration of existing knowledge.

Within the retail industry, knowledge sharing is central to strategic organisational focus but organisations still overlook the opportunity to use technological capabilities and knowledge to arrive at the vanguard of organisational success. Retail organisations continuously acquire and require the sharing of information and knowledge on latest trends, customer perceptions and competitor analysis.

It is also quite common to hear of South African organisations that do not invest in knowledge practices, which is in direct contrast to literature in the United Kingdom. Moffet, McAdam and Parkinson (2003) found that 43% of the United Kingdom organisations had adopted a technical strategy towards knowledge management, 27% of organisations had no strategy at all, 14% had a cultural strategy and 3% had a mixture of a technical and culture strategy.

HRM has the ability for creating, measuring and reinforcing knowledge-sharing expectations (Chivu and Popescu, 2008). In a HR context, for example, sharing the knowledge of case law or the outcomes of disciplinary enquiries and hearings can be tremendously beneficial to colleagues in the same role. Such practices prevent the re-invention of the wheel, as mentioned by Smith (2000), and re-enforces a collaborative team spirit. Scarbrough (2003) refers to three functions of HR that benefit from the knowledge sharing capabilities:

- Selection – The selection of right employees with the appropriate skills and attitudes that enable sharing of knowledge is critical for the right team-mix. This contributes to a critical component of the innovation process and a project team‟s ability to integrate diversity from diverse sources. In a selection process, it may be difficult to specify the entire mandatory knowledge and expertise, which may require advanced forms of selection dynamically related to interests, careers and knowledge of employees (Scarbrough, 2003).

- Compensation strategies – Compensation initiatives linked to knowledge sharing can be monetary or intangible in the form of status and recognition. A knowledge–intensive organisation is well aware of the benefits of compensating employees for sharing knowledge at team and organisational levels. It may increase employee morale, as well as lead to greater individual and team satisfaction and productivity. Strategies for compensating knowledge sharing may also highlight the intent to encourage idea generation, brainstorming and high performing work teams. Ultimately, these initiatives should be key ingredients in the succession and career planning strategy of the organisation.

  To correctly encourage knowledge sharing, organisations must realign incentive schemes that recognise significant contributions to organisational goals. Without sufficient incentives over time, knowledge providers have less reason to generate and share knowledge. The lack of sufficient incentives demotivates knowledge providers by not providing sufficient reasons to generate and share knowledge. Employees are then more likely to hoard knowledge and use it as a form of power (Desouza and Awazu, 2003). Yahya and Goh (2003) agree that group-based incentives and rewards stimulate knowledge sharing and transfer in a knowledge organisation.

- Career Planning – Linked to the compensation function, the acquisition and exchange of knowledge can often be dictated by the career system of the organisation. Organisations that foster team rewards are more likely to promote the sharing of knowledge among communities of practice and reward those employees who share knowledge with career opportunities for growth (Scarbrough, 2003). This can be supplemented with a dual-career system that acknowledges knowledge workers as well as other succession planning components. Currie and Kerrin (2003) encourage the use of lateral career planning in order to keep the momentum of sharing knowledge alive and appreciate one another‟s perspectives. Other authors have referred to career systems that shape the flow of employees over time and the way this interacts with the sharing of knowledge (Scarbrough, 2003 and Evans, 2003).

In a study conducted by Yahya and Goh (2002), training was considered closely associated with KM creativity, customer relationship management, quality initiatives and empowerment. McDermott and O‟Dell (2001) confirm that the role of organisational culture to promote knowledge sharing can be used as an alternative to make known KM challenges and alleviate any resistance.

7.3.4 Knowledge challenges

Knowledge challenges refer to the difficulties experienced by employees, the organisation and the environment that inhibits the promotion and support of a culture where employees willingly share and contribute to a wealth of knowledge for the benefit of all parties concerned.

The mean for knowledge challenges (M= 3.0643) indicates that respondents were uncertain whether they were confronted with knowledge challenges in their HR department. These challenges include: 1) changing employee behaviour from knowledge hoarding to knowledge sharing; 2) prevention of re-working the same procedure/process in order to complete tasks and projects; 3) retaining key knowledge when an employee leaves the organisation; 4) acceptance of knowledge management practices; 5) solving problems without the knowledge readily available; and 6) experiencing information overload.

Morris (2001) highlights the challenge of employees who perceive that they may lose their advantage and status by sharing knowledge. Guns (1998) agrees that the challenge of KM is most

evident in the role of the Chief Knowledge Officer as he/she faces the challenges of acquiring the commitment of senior leaders to support a learning culture and implementing process for sharing knowledge and managing knowledge assets. However, this research study reveals that most HR employees were uncertain about the existence of knowledge challenges. Clarity on the challenges could improve this grey area, as evident in Dunford‟s (2000) research that investigated the key challenges that inhibit effective KM. Dunford (2000) noted a framework that distinguishes between input and output challenges.

The input challenges refer to the production of a knowledge base that is able to distribute knowledge within the organisation (for example, quality of the HR information, insufficient time to feed HR information, incentives rewards sharing rather than hoarding). The output challenges refer to the aptitude for effective utilisation of any knowledge base (for example, slow introduction of the HR system, unwillingness to accept others as knowledge experts and information overload). The HR employees in the three retail organisations may only be aware of the information overload challenge, and oblivious to the other challenges mentioned.

Studies conducted by Cranfield University (1998) concluded that the majority of organisations believe that the required knowledge largely existed inside the organisation, and inside the minds of employees. The challenge was identifying that it existed, locating it and leveraging it. Such challenges that request the application and maintenance of knowledge have led to logical and methodical attempts to manage knowledge.

Alavi and Leidner (2001) agree that barriers and challenges to KM include organisational norms that promote and encourage knowledge hoarding which must be eased through a cultural shift that will change employee‟s attitudes to willingly and consistently share knowledge.

HRM must nourish a culture that embraces getting the right information to the right people at the right time (Chivu and Popescu, 2008). HR is responsible for eradicating these challenges by providing: a) time and private spaces for learning; b) learning resources; c) support for knowledge sharing and building; d) linkage of established business process to knowledge management activity and e) the selection and development of the right employees with the knowledge skills for tapping into the knowledge of employees (Scarbrough, 2003).

Chivu and Popescu (2008) explain that problem-solving skills and performance management are critical to support knowledge documentation, transfer and creation and a knowledge organisation requires less directing and controlling for success.

Papoutsakis (2006) recommends that managers ensure that their teams: a) include the objective of sharing knowledge with colleagues; and b) are aware of the IT resources available to support (a) above. Management is required to facilitate a climate of trust for KM to seen as reliable. Senior management is also required to manage the middle-level managers in an effort to minimise direct negative effects of resistance to change and the barriers to communication. A possible solution to overcome this challenge is HR training, joint planning workshops and the formation of cross-functional teams (Papoutsakis, 2006). This can create mutual trust and influence.

Papoutsakis (2006:10) researched the link between KM and IT to business performance and concluded that challenges will exist with the creation of a KM culture. Dufour and Steane (2007) conclude that the lack of focus on KM content and processes gives rise to the inconclusive nature of literature on KM challenges. Similarly, Haggie and Kingston (2003) highlight that further work was required to determine potential negative factors that contributed to the lack of KM.

7.4 Human Resource Information Systems (HRISs)

Respondents have indicated varied responses to the use of HRISs and associated technology. Research conducted by Desouza and Awazu (2003) suggest that HRISs, although delayed, have the ability to mature into an effective corporate asset. The use of the HRIS includes connection to project management systems that directly feed operational data. The data can be used to monitor HR usage and performance and act as a tool for crisis management by assisting with the location of personnel data and damage.

7.4.1 Use of HRISs (General and Specific)

The use of HRIS refers to the ability of the HRIS to store, manage and access information and knowledge for: a) generic purposes; and b) specific HR purposes.

The mean score for the use of HRISs was (M= 3.0157) which indicated that respondents were uncertain about the use of HRISs in their department. This finding implies that respondents may be unaware about the ability of the HRIS or oblivious that they are already reaping the benefits of using such a system.

The participants of the study responded to questions related to existing uses of an HRIS that include: 1) an up-to-date ICT infrastructure which supports human resource management and helps knowledge storage; 2) HR department currently asks employees to store the knowledge that resides in their heads (tacit knowledge); 3) HR department currently converts tacit knowledge to explicit knowledge via documents, processes and databases;4) managers have developed a system that encourages employees to write down what they know and to get those documents into the electronic system; 5) knowledge is codified and stored in databases that are accessible and readily used by anyone in the organisation; 6) human resource systems capture recruitment of applicants;7) human resource systems capture training and development of employees,; 8) human resource systems capture the performance appraisals of employees; 9) decisions can be confidently made using the available human resource knowledge; and 10) human resource knowledge is easily transferred to respective people without difficulties.

Ball (2001) suggests that survey results have illustrated the minimal uses of HRISs by HR stakeholders. Desouza and Awazu (2003) agree that organisations fail to realise knowledge as a resource in the knowledge economy and that the HRIS are its custodians and facilitators. HR is not recognising the benefits associated with the use of an HRIS which assists an organisation to manage knowledge.

However, Ball (2001) confirms that the most popular use of HRIS information includes current information utilisation, applicant tracing, absence monitoring as well as administrative purposes rather than analytical functions.

Research conducted by Haines and Petit (1997) produced the following findings:

- Users are satisfied when HRISs support more HRM functions and applications; and
- System applications such as training, documentation, ease of use and the perceived usefulness of the system are critical factors for a successful HRIS.

Skitmore and Sharma (2001) confirmed that HR activities, required within the HRIS, include the following functions:

- Employee profiles;
- Employee performance;
- HR development; and
- Payroll.

The research questionnaire did not directly include the above functions which may have generated the neutral responses for the use of HRISs. The research of McLeod and DeSanctis (1995) ,on the current status of the HRIS, concluded that HR functions, including staffing, recruiting and compensation, are widely used as a core or isolated function in the respondents‟ companies. Ngai and Wats (2008) showed similar results with HRISs perceived as a strategic tool for enabling a quick response and access to information.

However, the results in the above studies are in contrast to the research conducted in this study. In this research study, respondents indicated neutral responses for the use of HRISs and HRM functions such as recruitment, training and development and performance appraisal. These responses were consistent with studies conducted by Grobler, et al. (2006), who explains the three phases of the HRIS as: 1) Capture; 2) Retrieve information; and 3) Supporting structures. However, South African organisations are „fixed‟ in the second phase and not able to realise and reap the benefits associated with the full use of the HRIS (Grobler, et al., 2006).

7.4.2 Technology

Technology refers to the function, operation, support or management of computer-based information systems, including software and hardware components to amass, protect, administer, transfer, input, output, and retrieve information.

The mean score for technology, as a tool for sharing information, was M= 3.6786, which indicates agreement that technology is a tool used to share information. Participants responded to whether: 1) Email is used to share/manage information among employees; 2) Internet is used to share/manage information between employees; 3) Intranet is used to share/manage information between

employees; and 4) Electronic Document Management Systems are used to share/manage information between employees.

In this study, respondents were well aware of the use of email (68.6% agreed), internet (54.3% agreed), intranet (67.1% agreed) and EDMSs (52.9% agreed) to share information. The findings in this research study were consistent with studies conducted by Kruger and Johnson (2010) which confirmed a response rate of 74.20% for the questionnaires administered, indicating that ICT is well institutionalised in the South African industry and organisations are aware that ICT and information management are prerequisites to, and enablers of, KM. Lee and Lee (2009) showed that when organisations used internal IT capability, HRM practices such as employee participation, clearly defined jobs and extensive formal training were significant in predicting IT usage. Alavi and Leidner (2001) conclude that KM systems that are supported by IT tools can play a variety of functions to sustain KM, which can lead to various forms of KM support.

Research conducted by Pillania (2009) indicates that, although the initiative principally focuses on people, IT infrastructure and support are essential. In contrast, a study conducted by Johannessen (1995), cited in Robertson and Hammersley (2000), indicate that the autonomy provided with the use of technology had led to a breakdown of communication and the influence of IT played a minor role in KM within the organisation.

Technology developments have dramatically affected traditional HR functions such as recruitment, training and development and compensation. According to Reddick (2009), IT has enhanced HR operating efficiency and automated habitual aspects of the HR function. As a result, information and knowledge is more readily available (Pillania, 2009). HRM contains the expertise to develop low-tech knowledge management strategies.

Okpara and Wyn (2008) produced findings where respondents reported that their use of technology was aligned to the need to enhance services, improve productivity and be more efficient in managing HR activities. The transition to technologically-driven HR systems is encouraging; as such technology streamlines processes of data and information, whilst enabling the easy availability of employee information (Bohlander and Snell, 2004).

Gasco, Llopis and Gonzales (2004:380) produced key research findings for IT as a strategic tool that includes improved participation, construction of controls to ensure HR training effectiveness, preparation of quality content and the use of standardised technologies. These findings reinforce the need for HR to integrate learning and development that collaborates experiential learning.

7.5 The relationship between KM dimensions and the use of HRISs

The findings of this study suggest that there was a statistically positive correlation between Knowledge assets and knowledge sharing and the use of HRIS, respectively, while there was a statistical negative correlation between knowledge challenges and the use of HRIS. Accordingly, Hypothesis 1 was accepted. This finding implies that as knowledge is shared and viewed as an asset, the more employees use the HRIS as an information sharing tool. The negative relationship between knowledge challenges and the use of HRISs indicated that subjects, who perceive knowledge as a challenge (low score), make more use of the HRIS or vice versa.

Interestingly, 70% of respondents, in a study conducted by Iles, Yolles and Altman (2001), indicated that they worked in organisations that captured some knowledge, such as best practices or lessons learned, but in paper based formats. This finding may indicate the lack of awareness of the relationship between HRIS as a strategic technological tool for sharing knowledge.

Desouza and Awazu (2003) refer to the ability of a „knowledge market" linked to the HRIS infrastructure where employees can readily exchange knowledge. This would make information and knowledge readily available and less stressful for the end user, and less challenging to share (Desouza and Awazu, 2003). This finding supports the hypothesis that greater use of the HRIS leads to enhanced knowledge sharing capabilities.

7.6 The relationship between KM dimensions and technology

The findings suggest that there is a statistically positive correlation between knowledge assets and the use of technology to share information. Hypothesis 2 was accepted.

This finding implies that as employees recognise and understand knowledge assets as intangible, human (intellectual capabilities, attitudes, perceptions and abilities of employees), organisational (brands, patents and other intellectual property) and relational (knowledge and acquaintances with

customers, competitors and communities) components, the use of technology to support the knowledge asset increases. For example, as HR professionals champion the value of employees (human and intellectual capital), technology is used more frequently to support the knowledge initiative.

Valuing people as knowledge assets would be a difficult task without the support of technology that allows for knowledge transfer and sharing. For example, technology can be useful as it is equivalent to the economic value of the hardware and software in which an organisation has invested to maintain its knowledge operations, management and future renewal (Green, 2004).

In addition, there is a statistically significant negative correlation between Knowledge challenges and the use of technology to share information and knowledge sharing and the use of technology to share information. Accordingly, hypothesis 2 was accepted. Lower scores for knowledge challenges indicated challenges and higher scores indicated no challenges. The negative relationship between knowledge challenges and technology as a tool for sharing information indicated that subjects who perceive knowledge as a challenge (low score) make more use of technology as a tool for sharing information or vice versa.

7.7 Biographical variables and dimensions of KM

The biographical variables of the respondents have an influence on the KM variable.

7.7.1 Gender

Analysis of the data provides evidence that there is no statistically significant difference in the perceptions of males and females regarding the KM dimensions. The results in Table 6.5 (Page 86) show that males and females agreed with the view of knowledge assets. Although not significant, the perceptions of males (M= 3.7222) was slightly higher than females (M= 3.5962). Regarding knowledge challenges, both males and females were uncertain about its existence (Males M= 2.9722) and (Females M= 3.0962) while they slightly agreed that they share knowledge (Males M= 3.2778 and Females M= 3.1090).

Studies conducted by Connelly and Kelloway (2002) indicated that ***"gender was a significant moderator as female participants required a more positive social interaction before they would perceive a knowledge sharing culture as positive as that perceived by their male counterparts".***

7.7.2 Age

All age groups agreed with the view of knowledge assets. However, the 18-24 age group recorded slightly higher perceptions (M= 3.8800) followed by the 45-50 age group (M= 3.6500), the 25-34 age group (M= 3.6125) and the 35-44 age group (M= 3.5920). This finding could imply that the younger generation of employees are more familiar with new phenomena such as KM. Also it should be noted that the majority of the participants fell within the 25-34 groups.

All age groups indicated neutral responses to the existence of knowledge challenges.

Only the 18-24 age group agreed that they share knowledge (M= 3.6667). Employees" age and career stage may influence their knowledge sharing abilities through the magnitude and types of social networks, as younger employees have more exposure to technological infrastructure for sharing and gaining information and knowledge.

7.7.3 Job status

Analysis of the data provides evidence that there was no statistically significant difference in the perceptions of employees varying in job status regarding the KM dimensions. All job status groups agreed with knowledge assets. However, the HR Executive group recorded slightly higher perceptions (M= 3.900), followed by the HR Generalist group (M= 3.800), the HR Manager group (M= 6471), the HR Specialist group (M= 3.5879) and the HR Assistant group (M= 3.5455).

HR Generalists and HR Executives are the most likely to view knowledge as an asset as a result of the strategic nature and general overall role that they play in HR, as opposed to more focused and narrow roles.

All groups indicated uncertain responses to the existence of knowledge challenges. This finding could be attributed to the respondents being unaware of the reality of such challenges and its implications. With the exception of the HR Assistant group that slightly agreed to knowledge

sharing (M=3.5758), the other Job Status groups indicated uncertain responses about knowledge sharing.

7.7.4 Race

Analysis of the data provides evidence that there was a significant difference in the perceptions of employees varying in race regarding the knowledge challenges, whereas there was no significant difference in the perceptions of knowledge assets and knowledge sharing among the race groups, respectively.

All race groups agreed with the concept of knowledge assets. However, the Coloured race group recorded slightly higher perceptions (M= 3.7667), followed by Black race groups (M= 3.7571), the Indian race group (M= 3.6286) and the White race group (M=3.5379). Interesting to note, the highest score was recorded by the minority group of respondents (Coloured race group) whilst the lowest score was recorded by the majority group of respondents (White race group).

With the exception of the Coloured race group that indicated slight agreement to knowledge challenges (M= 2.7500), the White, Indian and Black race groups indicated uncertain responses to knowledge challenges: (M= 2.9167); (M= 3.0952); and (M= 2.9167), respectively.

All race groups indicated uncertain responses to knowledge sharing. This finding could be attributed to the respondents being unaware of such challenges.

7.7.5 Tenure

Analysis of the data provided evidence that there was no significant difference in the perceptions of employees varying in job tenure regarding KM dimensions. All respondents indicated slight agreement with knowledge assets. The 15-20 years‟ group indicated the highest mean score (M= 3.800).

The 0-5 years‟ tenure group (M= 3.1533) indicated uncertain responses to knowledge challenges whilst the 11-15 years tenure group indicated slight disagreed responses (M= 2.900), followed by 6-10 years (M=2.8485) and 15-20 years‟ tenure groups (M= 2.7500).

Whilst the 0-5 years‟ tenure group provided uncertain responses about knowledge sharing, the 11-15 years‟ group and 15-20 years‟ group offered slightly higher perceptions of knowledge sharing. (M= 3.6667) and (M= 3.5833), respectively. The only tenure group to slightly disagree with knowledge sharing was the 6-10 years‟ tenure group. This finding may imply that newer employees are not yet comfortable to share what they know.

7.8 Biographical variables and HRISs

The biographical variables of the respondents have an influence on the HRIS variable.

7.8.1 Gender

Analysis of the data provides evidence that there was no significant difference in the perceptions of males and females varying in gender regarding the HRIS dimensions. In terms of the use of HRIS, both groups are uncertain about the use of the HRIS in the organisation. It is surprising that the participants are uncertain as most of the uses listed in the questionnaire should form part of their responsibilities.

However, on technology as a tool for sharing knowledge, both groups agreed, with the females recording a slightly higher response rate.

7.8.2 Age

Analysis of the data provides evidence that there was a significant difference in the perceptions of employees varying in age and HRIS usage and technology. All the age groups slightly agreed that they used HRIS with the exception of the 35-44 age group who recorded a slightly disagreed response. Employees‟ age and career stage may also affect their HRIS usage as the lowest mean score was evident in the 35-44 year old age group which indicates that middle age employees may be more reluctant to use HRISs.

Regarding technology, all the age groups agreed except the 35-44 age group who slightly agreed. The age group 18-24 recorded the strongest level of agreement for technology as a tool for sharing information.

7.8.3 Job status

Analysis of the data provides evidence that there was a significant difference in the perceptions of employees varying in job status regarding the HRIS dimensions. The HR generalist group agreed that they used technology as a tool for sharing information (M= 3.4818). The senior HR groups of HR Managers and HR Executives disagreed (M= 2.5235 and (M= 2.6000, respectively). while HR Generalists (M= 2. 9600) and HR Specialists (M= 3.1727) were uncertain.

With the exception of the HR Manager group which provided an uncertain response, all other job status groups agreed that they used technology as a tool for sharing knowledge. The highest group was HR Assistants (M= 4.1136) which could be attributed to the large amount of administrative work done electronically (for example, emailing, typing.), followed by HR Generalist group (M= 3.9500), HR Specialist group (M= 3. 7803) and the HR Executive group (M= 3.4375).

7.8.4 Race

Analysis of the data provides evidence that there was a significant difference in the perceptions of employees varying in race and use of HRIS, while there was no significant difference in the perceptions of employees varying in race and the use of technology.

Whilst the Indian race group was the only respondents that indicated uncertain responses to the use of HRIS (M= 3.1190), the Black and Coloured race groups indicated slight agreement to the use of HRIS (M= 3.4071 and M= 3.3167, respectively). Only the White race group indicated that they slightly disagreed with the use of HRIS (M= 2.6897).

All race groups agreed that they used technology as a tool for sharing information.

7.8.5 Tenure

Analysis of the data provided evidence that there was no significant difference in the perceptions of employees varying in tenure regarding the HRIS dimensions. All the tenure groups indicated that they were uncertain about the use of HRIS and slightly agreed that they used technology as a tool for sharing knowledge.

7. 9 Conclusion

This chapter discussed the results of the study. Comparisons were then made with previous research and the dimensions previously examined by other researchers sometime differed from this study.

The results indicated that, firstly, there was a statistically positive correlation between knowledge assets and knowledge sharing and the use of HRIS, respectively, but there was a statistical negative correlation between knowledge challenge and the use of HRIS. Secondly, there was a statistically positive correlation between knowledge assets and technology and a statistically significant negative correlation between knowledge challenges and technology and knowledge sharing and technology. Thirdly, there was no significant difference in the perceptions of knowledge assets, challenges and sharing between males and females, age groups and job status, respectively. Fourthly, there was no significant difference in the perceptions of knowledge assets and knowledge sharing and race groups, respectively, but there was a significant difference in the perceptions of knowledge challenges and race groups. Fifthly, there was no statistically significant difference in the perceptions of knowledge assets, sharing and challenges between the levels of tenure, respectively. Sixthly, there was no significant difference in the perceptions of the use of HRISs and technology between males and females, respectively ($p > 0.05$). There was a significant difference in the perceptions of the use of HRISs and technology among age groups, respectively, and there was a significant difference in the perceptions of the use of HRIS and technology among levels of job status, respectively. There was a significant difference in the perceptions of the use of HRISs and race groups but there was no significant difference in the perceptions of technology and race groups. Finally, there was no statistically significant difference in the perceptions of the use of HRIS and technology between the levels of tenure, respectively.

CHAPTER EIGHT
CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

The main objective of the study was to establish the impact that Human Resource Information Systems (HRISs) will have, as a tool, for KM in a HR environment.

8.2 Conclusions

The objectives of the research were to establish the impact that Human Resource Information Systems (HRISs) will have as a tool for KM in a HR environment. Specifically, the study aimed to:

- To assess perceptions of KM in terms of knowledge assets, sharing and challenges.

The mean score for knowledge assets indicated that HR employees value and recognise the various forms of the knowledge assets within employees. Although the mean score for knowledge challenges indicated that HR employees were uncertain about knowledge challenges, the mean scores for knowledge sharing suggest that there was slight agreement that knowledge was shared.

- To determine perceptions of HRISs in terms of their usage and technology.

The mean score for the use of HRISs indicated that respondents were uncertain about their use of the HRIS functions, while the mean score for Technology suggested that the employees agreed with using technology as a tool for sharing information.

- To specify whether there is a relationship between KM (assets, sharing and challenges) and HRIS (usage and technology).

The findings suggested that there was a statistically positive correlation between knowledge assets and the use of HRIS as well as knowledge sharing and the use of HRIS. However, the findings also suggested that there was a statistically negative correlation between knowledge challenge and the use of HRIS.

The findings also suggested that there was a statistically positive correlation between knowledge assets and technology and there was a statistically significant negative correlation between knowledge challenges and technology and knowledge sharing and technology.

- To examine the influence of the biographical data on the perceptions of KM and HRISs, respectively.

The findings of the study suggested that there was no statistically significant difference in the perceptions of knowledge assets, challenges and sharing between gender groups and among age groups, job status groups and levels of tenure. While there was no statistically significant difference in the perceptions of knowledge assets and knowledge sharing among the race groups, there was a statistically significant difference in the perceptions of knowledge challenges among the race groups.

The findings also suggest that there was no statistically significant difference in the perceptions of the use of HRISs and technology, as a tool, for sharing information between gender and among levels of tenure. It was found that there was a statistically significant difference in the perceptions of the use of HRISs and technology, as a tool, for sharing knowledge among age and job status groups, respectively.

While it was found that there was a statistically significant difference in the perceptions of the use of HRISs among the race groups, there was no statistically significant difference in the perceptions of Technology as a tool for sharing information among the race groups.

8.3 Recommendations based on the findings of the study

Recommendations are made on the perceptions of the usage of HRISs (use of HRISs and technology) for KM (knowledge assets, knowledge sharing and knowledge challenges) in a HR environment investigated in this study.

8.3.1 Knowledge management

The KM dimensions includes knowledge assets, knowledge sharing and knowledge challenges.

8.3.1.1 Knowledge assets

The means score for knowledge assets indicated that HR employees recognised the value of the intellectual and human capital in individuals. Therefore, in order to increase the value of the organisational asset of knowledge, senior management should focus greater time and increased investment on the intangible assets in the organisation.

A greater number of KM interventions and systems need to be implemented in organisations to effectively leverage the knowledge assets that exist. These interventions include Communities of Practice and the correct use of knowledge exit interviews. Organisations can invest in KM programmes that are facilitated by the managers and subject matter experts within each department to create awareness and infuse a learning culture. Any KM intervention is contingent on the effectiveness of the knowledge integration in the organisation.

8.3.1.2 Knowledge sharing

The mean score for knowledge sharing indicated agreement that knowledge was shared within the HR teams. To maintain and expand the sharing that occurs, the types of rewards and incentives available should be a further point of exploration to encourage a KM environment that thrives on its ability to share. The knowledge sharing benefits can no longer be ignored as they become part of key strategic strategies within the business. All success stories should be shared and celebrated.

Knowledge is more easily shared with the support of management as they encourage employees to have more informal conversations to generate knowledge. As managers make existing knowledge known and accessible, more people are likely to use it.

The ability to share knowledge in a HR environment must be discussed between the management and business units of the organisations in order to realise its significance. For recruitment and selection, for example, HR has to ensure that new recruits are willing to share and co-create knowledge to benefit both themselves and the organisation as a whole.

8.3.1.3 Knowledge challenges

Considering the lack of comprehensive studies offering the holistic picture of KM challenges faced by the South African organisations today, it is not surprising that respondents indicated uncertain responses about knowledge challenges. Employees, who perceive that they may lose their advantage and status by sharing knowledge, will not be forthcoming to share information. HR should enlighten and educate each business unit on the challenges that do exist for them to be made aware of possible bottlenecks to effective KM. Respondents may have indicated uncertain responses to knowledge challenges due to their unawareness and lack of knowledge.

As a response, the role of *„knowledge officer"* and *„knowledge worker"* has become paramount in order to create a culture where knowledge is shared and timeously available for the right job. Knowledge workers depend on their individual knowledge to solve problems.

"Their roles include the ongoing acquisition of new information to reshape their existing knowledge, and they regularly combine and process information to generate new outputs" (Zack, 1999).

The concept of KM must be introduced and ingrained at strategic levels with a Knowledge Management Strategy aligned to the Organisational strategy.

8.3.2 Human Resource Information Systems

The HRIS dimensions include the use of HRISs and technology.

8.3.2.1 Use of HRIS

Organisations must use the abilities of the HRIS for HR functions that are readily available. Applicant tracking, training and development and compensations are only a few modules that the HRIS can revolutionise for the benefit of the HR department.

As respondents indicated uncertainty about the use of HRIS, HR practitioners should collaborate with systems‟ users to demonstrate to employees the capabilities and advantages of using the HRIS.
Regular workshops, where users‟ share their frustrations or share new uses of the HRIS, must be available to the employees to broaden their awareness and knowledge of the uses of the HRIS.

8.3.2.2 Technology

There should be continued investment in technology that facilitates knowledge generation, sharing and updating within departments and across organisations and industries, such as the retail industry. Employees should continue to be trained regarding the technology with the benefits of each system well demonstrated and understood.

8.4 Recommendations for future research

This study provides a platform for future work to explore the role of HRIS and KM in an environment using a larger sample size and increased response rate to provide further analysis for generalisation.

Other areas, not tested in this study that could be researched in further studies, include the organisational functioning unit that HR operates within, deeper investigation into the components of the HRIS and further exploration of the concept knowledge assets.

There is certainly a need for the HRM function/module to assist organisations to identify and tap into the crucial knowledge base. This would aid the business‟s focus on competitive strategies through the integration of this knowledge base with the decision-making process. Hence, the focus on HR and KM in a South African context should be researched further. Toracco (2000) outlines a model of KM and human resource development that identifies four basic functions: creating a culture for KM; developing a model for codifying knowledge; addressing the accessibility of knowledge; and focusing on methods and systems for KM, with emphasis on individual knowledge. It is recommended that this model should be tested in an organisation and presented as a case study.

Okpara and Wynn (2008:72) discovered that the key to future developments in HR is the collaborative relationship among senior management, line management and HR partners to, among other things, invest in technology to provide realistic and meaningful information through training and development and solicit the trust from employees.

As respondents indicated uncertain responses about knowledge challenges, further research on the existence of these challenges and their implications require investigation. Further research on the

KM challenges should expand to global challenges in multicultural organisations that invest in KM. It would also be interesting to identify the reasons why the respondents on this study provided uncertain responses to the existence of knowledge challenges.

The extent to which available knowledge is re-used was not explored in an in-depth format. The responses that indicated that knowledge was shared should be investigated further to determine the extent to which employees use what is shared. Consistent with Pillania"s (2007) research, which identifies eight critical success factors required for a successful KM implementation; further research should be conducted to identify success factors for knowledge sharing. The eight factors highlighted by Pillani (2007) include:

- Understand and define KM;
- Establish a fit with the needs of the individuals and business;
- Integrate KM champions and a supporting team;
- Establish senior management support;
- Demonstrate and communicate the benefits of financial and non-financial rewards; and
- Achieve a balance between people and IT.

New theoretical models and practical approaches are needed to assist with the formulation and implementation of KM in organisations.

An in-depth study on KM and HRIS usage within organisations needs further examination. This will allow organisations to work together harmoniously.

Whilst this study has confirmed existing studies into HRIS, it provides a platform for future work in this area, which should concentrate on aspects such as continuous improvement and change management, and other strategic HR functions of the HR business partner. The role of the HR business partner is evolving in the modern organisation and the role should be integrated with the support that IT can provide, such as the HRIS. The general role of IT in future organisational knowledge developments should receive further academic attention.
The functions of the EDM, email and intranet have been emphasised in previous literature but require further investigation within South African organisations.

8.5 Conclusion

This sample is not a representation of all industries within the South African business sector. Therefore the results cannot be generalised to industries that were not part of the study.

The study indicated that there was a statistically positive correlation between knowledge assets and knowledge sharing and the use of HRIS, respectively, but there was a statistical negative correlation between knowledge challenge and the use of HRIS. Secondly, there was a statistically positive correlation between knowledge assets and technology and a statistically significant negative correlation between knowledge challenges and technology and knowledge sharing and technology.

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APPENDIX A

UNIVERSITY OF KWAZULU-NATAL

School of Management

M Com Research Project

Researcher: Krisandra Naicker (083 464 2345)

Supervisor: Logan Govender (031 260 7561)

Research Office: Ms P Ximba 031-2603587

Dear Respondent,

I, **Krisandra Naicker**, a MCom Human Resource Management student at the **School of Management**, of the University of KwaZulu-Natal, wish to invite you to participate in a research project titled " P**erceptions of human resource information system usage for knowledge management in the context of human resource management".**

The objectives of this study are to:

- To assess perceptions of KM in terms of knowledge assets, sharing and challenges;
- To determine perceptions of HRISs in terms of its usage and technology;
- To specify whether there is a relationship between KM (assets, sharing and challenges) and HRIS (usage and technology); and
- To examine the influence of the biographical data on the perceptions of KM and HRISs, respectively.

This research project is directed toward the successful completion of my Master"s Degree. I would appreciate your time to answer the enclosed questionnaire.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. The confidentiality of the response to the questionnaire is guaranteed. I wish to reiterate that the purpose of this research and the results are purely academic.

Should you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take about 20 minutes to complete. I hope you will take the time to complete this survey.

Sincerely,

....

Researcher Date

Krisandra Naicker

APPENDIX B

UNIVERSITY OF KWAZULU-NATAL
School of Management

M Com Research Project

Researcher: Krisandra Naicker (083 464 2345)

Supervisor: Logan Govender (031 260 7561)

Research Office: Ms P Ximba 031-2603587

PERCEPTIONS OF HUMAN RESOURCE INFORMATION SYSTEM USAGE FOR KNOWLEDGE MANAGEMENT IN THE CONTEXT OF HRM

Dear Respondent,

Instructions: Please read carefully.

The objective of this survey is outlined in the covering letter to respondents.

Please rate how strongly you agree or disagree with each of the following statements by circling the appropriate box. If you are completing this questionnaire electronically, please delete the number in the chosen box and replace with an "x".

There are no right or wrong answers. The best response to any item is simply the one that best reflects your current situation **in your department** or as you would experience them.

Thank you for participating.

APPENDIX C

M Com Research Project

Researcher: Krisandra Naicker (083 464 2345)

Supervisor: Logan Govender (031 260 7561)

Research Office: Ms P Ximba 031-2603587

CONSENT

I_____(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

_____ _____

Signature of Participant Date

APPENDIX D

Where applicable:

1 = Strongly disagree (SD)

2 = Disagree (D)

3 = Neither disagree nor agree (N)

4 = Agree (A)

5 = Strongly agree (SA)

Please Note:

Tacit Knowledge: knowledge that rests inside individuals and is learned in an unstructured and informal way which helps create the knowledge intensive organisation to compete successfully.

Explicit Knowledge: knowledge that has been expressed into words and numbers and that can be shaped formally and systematically in the form of data, specifications and manuals.

Knowledge Management: comprises a range of strategies and practices used in an organisation to identify, create, represent, distribute, and enable usage of insights, information and experiences. Such insights and experiences comprise knowledge, either embodied in individuals (tacit) or embedded in organisational processes or practice (explicit).

Human Resource Information Systems: a strategic tool that stores, generates, and transfers the relevant information which may also be in the form of knowledge to enable efficiency and effectiveness, for example, a human resource system for training, performance appraisals, learning and development, recruitment and selection.

Information and Communication Technology (ICT): infrastructure that allows users to participate in a rapidly changing business environment with access to varied and developing technologies. ICT tools can be used to find, explore, analyse, exchange and present information responsibly and without discrimination giving users quick access to ideas and experiences from a wide range of sources.

Electronic Document Management Systems (EDMS): A system that allows the management of electronic documents, including text, documents, spreadsheets, graphics, graphs and charts, email, scanned images, html documents as well as manages the life cycle of documents including creating, storing, retrieving, archiving and disposal.

SECTION A: BIOGRAPHICAL DATA

1. **Age**

18-24	**1**
25-34	**2**
35-44	**3**
45-64	**4**
55-64	**5**

2. **Gender**

Male	**1**
Female	**2**

3. **Job status**

Hr Administrator	**1**
HR Assistant	**2**
HR Generalist	**3**
HR Specialist	**4**
HR Manager	**5**
HR Executive	**6**

4. **Race Group**

Indian	**1**
Black	**2**
Coloured	**3**
White	**4**
Other	**5**

5. **Tenure (Number of years in current job role)**

0-5 years	**1**
6-10 years	**2**
11-15 years	**3**
15-20 years	**4**
20 years and above	**5**

SECTION B: KNOWLEDGE MANAGEMENT (KM) PRACTICES	SD	D	N	A	SA
1. There is good understanding of knowledge management and its value.	1	2	3	4	5
2. The current usage of KM is extensive.	1	2	3	4	5
3. There is great effort used to make knowledge that already exists known and accessible (for example, by sharing best practices).	1	2	3	4	5
4. Management supports and encourages KM.	1	2	3	4	5
5. Employees are viewed as assets.	1	2	3	4	5
6. The role of human capital contributes to the competitive advantage of business in today‟s economy	1	2	3	4	5
7. KM improves overall effectiveness of the generation, application and sustainability of intellectual capital.	1	2	3	4	5
8. Employees are rewarded for sharing what we know.	1	2	3	4	5
9. Changing employee behaviour from knowledge hoarding to knowledge sharing is not difficult.	1	2	3	4	5

	SD	D	N	A	SA
10. We do not re-work the same procedure/process for the completion of repetitive tasks and projects.	1	2	3	4	5
There is no loss of key knowledge when an employee leaves the organisation.	1	2	3	4	5
11. There is no resistance to KM practices currently in use.	1	2	3	4	5
12. We can solve problems because the knowledge needed is readily available.	1	2	3	4	5
13. We do not experience information overload.	1	2	3	4	5
SECTION C: HUMAN RESOURCE INFORMATION SYSTEMS (HRISs)					
14. There is an up to date ICT infrastructure which supports human resource management and helps knowledge storage (i.e. an HRIS).	1	2	3	4	5
15. HR department currently asks employees to store the knowledge that resides in their heads (tacit knowledge).	1	2	3	4	5
16. HR department currently converts tacit knowledge to explicit knowledge via documents, processes and databases.	1	2	3	4	5
17. Managers have developed a system that encourages employees to write down what they know and to get those documents into the electronic system.	1	2	3	4	5
18. Knowledge is codified and stored in databases that are accessible and readily used by anyone in the organisation.	1	2	3	4	5
19. Human resource systems capture recruitment of applicants.	1	2	3	4	5
20. Human resource systems capture training and development of employees.	1	2	3	4	5
21. Human resource systems capture the performance appraisals of employees.	1	2	3	4	5
22. Decisions can be confidently made using the available human resource knowledge.	1	2	3	4	5
23. Human resource knowledge is easily transferred to respective people without difficulties.	1	2	3	4	5
24. Email is used to share/manage information between employees.	1	2	3	4	5
25. Internet is used to share/manage information between employees.	1	2	3	4	5
26. Intranet is used to share/manage information between employees.	1	2	3	4	5
27. Electronic Document Management Systems are used to share/manage information between employees.	1	2	3	4	5

Thank you for your time taken to complete this survey.

Turnitin Originality Report

PERCEPTIONS OF HUMAN RESOURCE INFORMATION SYSTEM USAGE FOR KNOWLEDGE MANAGEMENT IN THE CONTEXT OF HUMAN RESOURCE MANAGEMENT
by Krisandra Naicker

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